THE BUILDER

INCORPORATING

"ARCHITECTURE" and "THE BRITISH ARCHITECT"

VOL. CLXXVI JANUARY 14, 1949 No. 5526

THIS WEEK'S NEWS

PAGE

EDINBURGH UNIVERSITY authorities have asked the presidents of the R.I.B.A. and the R.I.A.S. to make a joint recommendation of six architects from whom the University may make a final choice of architect for the medical buildings in George-square. 32

MR. R. FURNEAUX JORDAN, F.R.I.B.A., A.A.Dipl., has been appointed principal of the Architectural Association School of Architecture in succession to Mr. R. Gordon Brown, A.R.I.B.A., A.A.Dipl., who has been appointed to the Chair of Architecture at Edinburgh University. He takes up his duties on February 1. 33

THE BOARD OF ARCHITECTURAL EDUCATION of the R.I.B.A. has analysed and commented upon the Mars Group and Architectural Students' Association Interim Report on Architectural Education. The Board concludes that after making all deductions the residue of students whose methods of training are unknown is negligible. 72

R.I.B.A. PRIZES AND STUDENTSHIPS for 1949 were announced at the meeting held on January 11. 74

A CORRESPONDENT writes that he is at a loss to understand the "destructive criticism of incentive schemes" made by Mr. H. R. Collier in our issue of Dec. 31, while another correspondent writes in support of the views expressed by Mr. Collier and gives some additional reasons for "the dislike of the present system." 77

SPECIAL FEATURES

A PENCIL AND WASH DRAWING by Mr. Arthur C. Fare, R.W.A., of Trafalgar-square, showing the fountains and the Jellicoe and Beatty memorials is reproduced as a double-page inset. 4

THE BUILDING OUTLOOK FOR 1949 is commented upon by Ministers of the Crown and leaders of the industry and building professions in a series of messages specially contributed to *The Builder*. 36

THE "STRIKING AND ILLUMINATING CONTRAST" between the contemporaries, C. F. Annesley Voysey and Sir Reginald Blomfield is described by Mr. Martin S. Briggs, F.R.I.B.A., in an illustrated article. 39

SOME illustrated notes, prepared in the office of F. R. S. Yorke, E. Rosenberg and C. S. Mardall, F., L., and A.R.I.B.A., deals with the problems which face architects in the planning and construction of factories. 42

RECENTLY completed Collegiate buildings at Oxford are illustrated in colour. They are the Gate House for Trinity College, designed by Hubert Worthington (Kt.), A.R.A., and the Undergraduate Block for St. John's College, designed by Edward Maufe, R.A. 47

OTHER buildings selected for inclusion in this number of *The Builder* are: A Factory at Wolverhampton—Jackson and Edmonds, FF.R.I.B.A., Architects; Field End School, Eastcote—Howard V. Lobb, F.R.I.B.A., Architect; Houses at Wood End Close, Hedgerley, Beaconsfield—Frank Roscoe, A.R.I.B.A., Architect; and a Government Housing Scheme, Gibraltar—Robert Atkinson and A. F. B. Anderson, FF.R.I.B.A., Architects. 55 *et seq.*

TOWARDS RECOVERY

THE Government's Four-Yean Plan for economic recovery, with its inevitable insistence on the vital need for higher and still higher exports, would not at first sight seem to suggest a particularly hopeful outlook for the building industry in 1949. "Houses, factories and schools" was the monotonous prescription for last year; "The medicine as before" is the decree of Government for 1949, though there is to be a larger dose of schools—double the amount of last year, in fact, at an estimated cost of £55m.

Yet, notwithstanding the apparent sameness of the outlook, there is a spirit of cautious optimism abroad, due no doubt to the encouraging fact that the export target was reached well before the end of the year. Slowly but surely, with generous American help, we seem to be on the road to overcoming our grave economic troubles, and if the rate of recovery is maintained and improved upon during the next few months, who knows that pleasant surprises may not be in store, as indeed they proved to be in 1948? As the President of the National Federation of Building Trades Employers pointed out in his Christmas message to the regions, the industry regained last year a welcome measure of freedom to manage its own affairs by the raising of the licensing limit from £10 to £100 for all work, and from £100 to £1,000 for certain industrial work and by the scrapping of the W.B.A. Priority Scheme. Increasing relaxations of control would put new heart into the industry.

Now that the patient is showing signs of convalescence, a more varied diet would do much to accelerate recovery. Here are a few suggestions that might be sympathetically considered by our controllers. Why not license more of the general building work which is so heavily in arrears? This would help to promote public confidence and all those other imponderables which are commonly ignored by the economists when arranging their programmes of capital investment. Again, why not allow a larger amount of private housebuilding? It would not surprise us to find that the demand for houses to rent was well on towards being met, while there are scores of thousands of people who would be only too glad to own their own houses, as they could do with the aid of a building society loan. Then there are great numbers of middle-class people who would like to build for themselves, to the design of their own architects, a rather more commodious type of house than that provided by the local authorities. Why not allow them to do so? If the pent-up energies of the private housebuilders could be released there would be a notable increase in the rate of housebuilding as well as a reduction in the at present crippling costs.

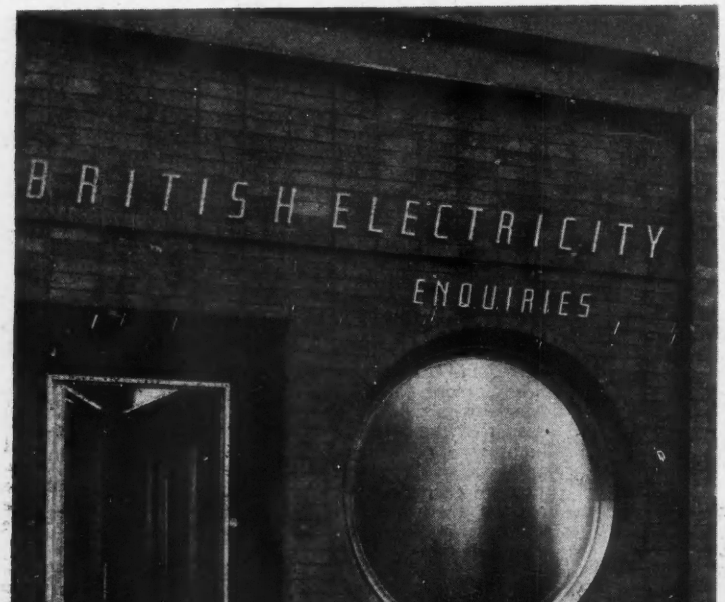
With materials becoming, as we hope and expect, more plentiful during 1949, the greatest problem before the industry is likely to be that of output. Programmes of capital expenditure, no matter how carefully worked out by the economists, are meaningless without a high level of production. If we could get back to our pre-war level of output—a perfectly reasonable one, well within the capacity of the industry without overstrain—one of our greatest anxieties would disappear. Monetary incentives have proved to be helpful, and it is encouraging to know that the number of firms operating bonus-on-output schemes is steadily increasing. The handbook which is being prepared by the Employers' Federation to provide guidance to the small builder in the operation of suitable schemes, if rather belated, will be none the less welcome when it appears. The report of the Working Party on the Building Industry, before which the Federation will be putting its evidence this month, will also be awaited with keen interest.

May it be full of acceptable and practicable suggestions for increasing output, for it is upon this necessity that the standard of life of all depends. In the meantime, no opportunity should be lost of convincing those workers who remain unresponsive that abundant production at reasonable cost is the only key to personal prosperity.

Inquiries are the order of the day, and one of peculiar significance, particularly to private property owners and to the amenities in general, is that which a committee of the R.I.B.A. is now conducting into the present and future status of private architectural practice. Private architects have been hit by the consequences of the war perhaps more heavily than any other class of professional men. Many have given up their practices for lack of work and retired, or gone into official offices. Others have managed to keep afloat and solvent by means of war-damage work and by accepting very welcome commissions from public authorities. The action of certain enlightened county and local authorities in giving out official work to private architects in preference to inflating their already swollen staffs has been widely appreciated for its wisdom, generosity and breadth of outlook, but it has not brought the needed relief to numbers of men whose aim in life is independent practice. When the abnormal period through which we are passing is behind us it will be a serious source of embarrassment to the community, particularly that part—and a very large part it promises to remain—which exists by private enterprise, if there are not enough architects available to cope with the immense amount of work which must then be done. How to keep private practices alive in the interregnum is one of the questions to which the R.I.B.A. committee will no doubt address itself.

One obvious way of helping the private architect, as we have already suggested, is to increase general building work and private housebuilding. Builders, clients and building societies are more than ready to co-operate. It is for the Government to act. But apart from specific measures to meet an emergency, there is a need to survey the whole field of building from the architectural point of view. For example, if it is true (though so far as we are aware there are no statistics to prove the statement) that only 20 per cent. of the plans that come before local authorities for approval are the work of architects, then clearly a large section of the building public needs to be made aware of the advantages—economic and practical as well as aesthetic—of engaging an architect. It has often been urged that the State should make the employment of an architect compulsory for all major building work; but it is unlikely that such a bold step could be taken at our present stage of social evolution. The reform must be brought about by persuasion. Precisely how, is the question to be answered. Private advertising is rightly taboo, but whether it is practicable to resort to corporate publicity—now quite a respectable method adopted by the Government itself—the R.I.B.A. committee might well consider.

On a broad survey of our country's economic position at the beginning of another year there is reason, if not for optimism at least for increased confidence. "All our past proclaims our future," wrote Swinburne. That the qualities which made us great and prosperous in the past are still very much alive is plain from the leeway made up during 1948. It is only by our united and unremitting exertions—not on Party but on national lines—that 1949 can become, as we all wish it to be, a Happy and Prosperous New Year.



INFORMATION BUREAU, 164, Great Portland-street, W.1, for the British Electricity Authority. The architect is A. L. Osborne, F.R.I.B.A.

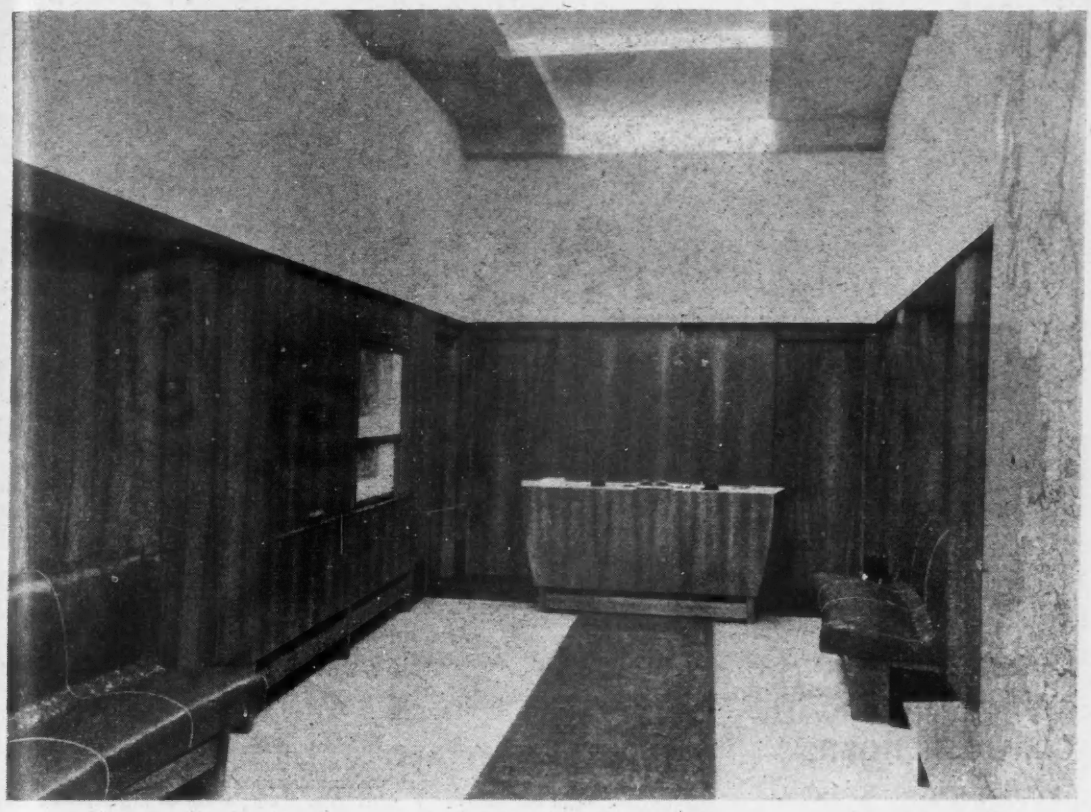
NOTES AND NEWS

University Extension, Edinburgh.

EDINBURGH UNIVERSITY proposes to extend the medical buildings at the west end of the north side of George-square, Edinburgh, and the presidents of the Royal Institute of British Architects and the Royal Incorporation of Architects in Scotland have been asked to make a joint recommendation of six architects from whom the University may make a final choice.

The Chantrey Collection at the R.A.

AN exhibition of the Chantrey collection was opened to the public on Saturday last. The originals of many reproductions will be seen by some for the first time. It would, indeed, be interesting, were it possible, for Chantrey, sculptor and artists' benefactor, to perambulate the galleries and for us to hear his comments on the pictures purchased through his noble gift (£105,000, producing £2,000 a year). Whatever derogatory opinions may be expressed by the moderns, no doubt the choice made at the time of their purchase represented the fashion in subject matter and technique and were records of their period, and to this extent they are history. Selections of pictures and sculpture are principally made from the vogue of the day. Many would probably make little appeal to Chantrey, who would, no doubt, prefer the more academical work of his period. Yet fashion changes in painting as in architecture. How many buildings awarded prizes in competitions in the past and built, would be thought highly of to-day? A small percentage, we venture to think, yet they were chosen by distinguished men and record their age and period as do the Chantrey pictures. What more can be said except that the exhibition is of much interest in showing the trend of fashion in pictures bought through Chantrey's fund. Frith's "Derby Day" is considered by many poor art, but it is, indeed, a fine record of happenings and costumes of its period. The exhibi-



INFORMATION BUREAU, 164, Great Portland-street, W.1. A view of the interior. (*See Note.*)

tion is open daily (admission 1s. 6d.) from 10 to 5.30 (Sundays, 2 to 5.30) until March 6.

A.A. School of Architecture.

MR. R. GORDON BROWN, A.R.I.B.A., A.A.Dipl., has asked, for personal reasons, to be released at the earliest possible date from his appointment as Principal of the Architectural Association School of Architecture. The Council has acceded to his request with very sincere regret.

MR. R. FURNEAUX JORDAN, F.R.I.B.A.

Mr. Gordon Brown was appointed Principal in December, 1944, and has been responsible for the post-war reconstruction and great expansion of the School, in which undertaking the Council acknowledges his exceptional services. His educational programme will be carried on and further developed by Mr. R. Furneaux Jordan, F.R.I.B.A., A.A.Dipl., who has been offered and has accepted the appointment of Principal. He will take up his duties on February 1.

Mr. Gordon Brown has now been appointed to the Chair of Architecture in the University of Edinburgh.

Architect's Award for Gallantry.

THE Royal Humane Society's Silver Medal has been awarded to Mr. Robert Sutherland Horne, L.R.I.B.A., for his action in rescuing three men from the sea in Portsmouth Harbour. In making the presentation on January 8, the Lord Mayor of Portsmouth (Coun. F. Miles) said: "Mr. Horne's gallantry and disregard for his personal safety have won not only the Society's highest award but also the admiration, appreciation and affection of his fellow members of the Portsmouth Sailing Club and the whole city." Mr. Horne is at present chief of the drawing office of Messrs. A. E. Cogswell and Sons, the Portsmouth architects.

I.A.A.S. Appoint Assistant Secretary.

MR. C. K. MCDOWALL, B.A. (Oxon), has been appointed assistant-secretary of the I.A.A.S. He was educated at Eton and Balliol and was for some time a Master at Stowe. After serving in the Army during the war, he continued service in the Education Branch of the Control Commission in Germany. He will also act as public relations officer and secretary of the I.A.A.S. Education Committee.

Major G. B. J. Athoe, F.I.A.A., the secretary of the I.A.A.S., is now convalescing after a major operation.

Electricity Information Bureau.

THE British Electricity Authority recently took over as headquarters Nos. 160-166, Great Portland-street, W.1, where offices, reference library, appliance showrooms, a display centre, and space for stationery and records have been established to the plans of Messrs. Norman and Dawbarn, F.R.I.B.A. An interesting little Information Bureau occupies part of the ground-floor of No. 164, Great Portland-street, and has been designed by Mr. A. L. Osborne, F.R.I.B.A. Views are shown in these pages. The electrical contractors were Messrs. Troughton and Young, Ltd., and the builders Messrs. King's (B.D.J.), Ltd.

Professional Announcements.

MR. J. M. SMITH, F.R.I.B.A., architect and surveyor to the Wycombe R.D.C., has changed his address to 100 Easton-street, High Wycombe.

MESSRS. GEORGE CORDEROY AND CO., chartered quantity surveyors, of 21, Queen Anne's Gate, Westminster, have taken into partnership Mr. A. H. Killick, F.R.I.C.S., A.M.I.Struct.E., who has been with the firm for many years. The title and address of the firm are unchanged.

FROM "THE BUILDER" OF 1849

Saturday, January 13, 1849.

ARCHITECTURE IN OXFORD.—The *Oxford Herald* mentions various architectural improvements with which the liberality of the university, of particular colleges, or of individuals, as well by the restoration of ancient buildings as by the erection of new ones, has lately adorned Alma Mater. One is the restoration of St. Mary's the Virgin, under the directions of Mr. Blore, at an expense which they think cannot be short of 3,000*l.*

MR. HUBERT WORTHINGTON, A.R.A., who was created a Knight in the recent New Year Honours List. Mr. Worthington's most recent work, the Gate House for Trinity College, Oxford, is illustrated in this issue.

CALVI, CORSICA. It was here, in 1794, while commanding the besieging naval forces, that Nelson lost the sight of his right eye.

CORSICAN HOLIDAY

BY ARTHUR W. KENYON, C.B.E., F.R.I.B.A.

(With Sketches by the Author.)

CORSICA, where nobody works and everyone is poor but contented and cheerful—this is the first impression one gets on entering the country. This may be a libel on the people, but it is also the impression one retains until leaving the island.

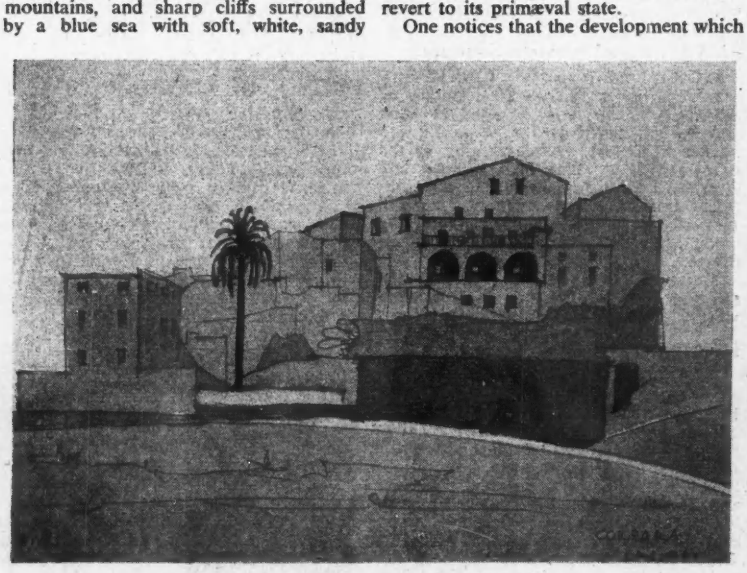
As one flies over the island, one feels that it is uninhabited—uncultivated scrubland, with rough, rugged hills and mountains, and sharp cliffs surrounded by a blue sea with soft, white, sandy beaches. When you land on the ground you feel disappointed, the land appears unwelcoming. As you travel through the country you begin to compare it with other countries—Switzerland, Norway, the Dolomites—but it is not quite any of these, and it is a day or two before you begin to realise there is something which enters into you, and that something is the feeling of being near to the earth and you become attracted and fascinated by the very crudeness of nature. This does not mean there is no cultivation. There is a little; there has been more, and one feels that man has struggled, but that he is gradually giving up the struggle and that in time, and in a short time, nature will take over again and the island will revert to its primæval state.

One notices that the development which took place in its buildings in its hill towns during the late 17th and early 18th centuries has stood still, and any building now taking place is mostly renovations or copies of what has gone before. Skeletons of houses remain in the countryside without roofs or windows—buildings left to decay—and the solid masonry stands gaunt, defying nature.

The small hill towns, a great distance from one another, are fascinating in their grouping, built within the hills or perched high up on the rocks, and the contour of the ground is no deterrent; one finds two to three storeys on the upper slopes; six, seven and eight on the lower slopes—nestling close to one another. All the buildings are of local rubble stone plastered over and with very little ornamentation; the roofs are covered universally with Roman tiles. The churches are simple and crude in detail, but they usually have a three-storeyed open tower which dominates the town.

To make Corsica into a tourist centre much would have to be done—but it could be done without spoiling the country. The means of transport are still primitive. The railway, a single-line, narrow-gauge track, taking only a rail car and occasional freight, runs very infrequently and is slow and tortuous. The roads have been formed, but have not been surfaced and are still rough and stony. The motor bus, also infrequent, connects up some of the towns but, owing to the winding and steep roads, is also slow. The private hire cars—few in number—are very expensive to hire. It is possible to imagine the railway ceasing to exist and the motor car taking its place. It is also possible to imagine the motor car giving way to the more common means of local transport—the donkey. The way really to see Corsica is by the latter means of transport and with plenty of time at your disposal, and then the real Corsica is discovered when you get right down to the earth and among its delightful and hospitable people.

You may ask: "Shall I take a holiday



CORBARA, CORSICA.

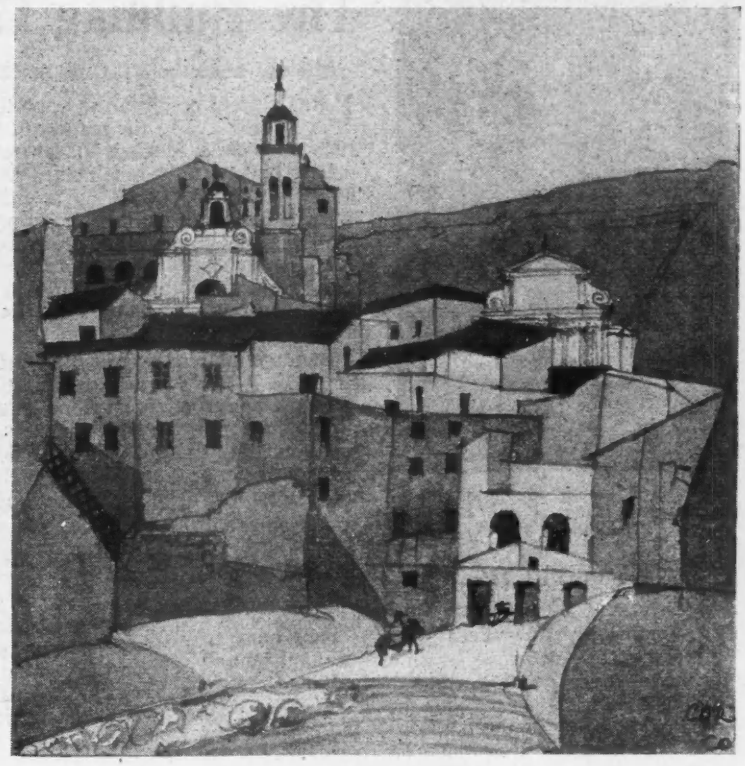
in Corsica?"—and the answer could well be "Will Corsica accept you unto itself?"

What of the climate? Blue sky and still bluer sea, soft and mild, free from wind and rain. It may sometimes look as if rain is approaching and there may be clouds at times to relieve the almost continuous blue, but rain—no! It seems to go elsewhere. May, June and July, one is told, are the best months, but the winters are mild, although a little lonely.

And what of the people—with black curly hair, sometimes handsome, always polite? They work little, play little, sit about and talk a lot. There is no apparent modern culture. There is no clamour to rush about and see things. There is contentment in the everyday things of life—sipping the simple wine of the district and smoking the tax-free cigarettes of the island. Can one imagine anything nearer to nature? For the visitor there is the sea everywhere, calm and gentle; the sands—the silken sands—lapped by tideless waters, always inviting; walking up the rough tracks of the mountains among the cactus, the olive trees, the flowering shrubs and the eucalyptus trees.

Food is apparently sufficient for the people's wants; fish in plenty; flocks of sheep of about three to four hundred, long haired, rather like goats; a few cattle; a few goats; very few vegetables—beans mostly, and some potatoes; the bread is dark and coarse, but sweet and not unsavoury; coffee at the moment is poor and tea only for the English; milk is rare—mostly for the mothers and children; cheese, except goat cheese, is imported.

One feels loth to leave this peaceful and fascinating island and there is a general desire to return to explore further into its beauties.



CORBARA, CORSICA.

THE CITADEL, CALVI, CORSICA.

CORBARA, CORSICA.

The Building Outlook for 1949

Mr. Bevan among the builders: a photograph taken at the Building Exhibition, 1947.

Message from the Rt. Hon. Aneurin Bevan, M.P., Minister of Health.

I AM glad to be given the opportunity again this year of sending a New Year message to the readers of *The Builder*. The hopes I held out for 1948 have been fulfilled, thanks to the co-operation of all concerned. I believe that we have now nursed the post-war housing programme through its most difficult period. The initial target of 750,000 additional homes estimated as required, in 1945, to provide a separate home for every family needing one was passed in September. Although the demand has increased considerably since that estimate was made, 750,000 homes in just over three years from the end of the war is no mean achievement. We can now go on to find out how many more are needed, and provide them as quickly as we can.

Building materials are in much better supply, and they show signs of a fall in price. There are also indications that bonus payment schemes are speeding construction. I hope that in 1949 these factors will be reflected in a reduction in the cost of houses, which is too high. The one thing we are not going to do to bring it down is to lower the high standards of accommodation we have set ourselves. My message to you for 1949 is "Carry on—up with the houses and down with the costs!"

A Happy and Fruitful New Year to you all!

Aneurin Bevan

From the Rt. Hon. C. W. Key, M.P., Minister of Works.

IN sending my New Year greetings once more to readers of *The Builder* I wish first to thank you all for the great contribution which the building industry has made during 1948 towards the national recovery.

When we compare the position of the trade to-day with what it was twelve months ago, we can see some genuine improvements. The overload on the building programme has been substantially removed, with the result that the progress of work on sites has been greatly accelerated. The supply of building materials has also improved; this has made it possible to discontinue the control over the distribution of materials, only two materials —timber and steel—being still subject to control. At the same time it has been possible to raise the limit for licence-free work to £100 for all classes of building, and to £1,000 for industrial buildings and for certain other classes of property.

The whole outlook for the industry is, I feel, healthier and sounder. Building activity is linked very directly to the general fortunes of the nation, and British industry as a whole is acquitting itself magnificently. There is, therefore, ample opportunity for the building trade to show what it is capable of doing, but if we are to reap the full fruits of its efforts we must keep the industry constantly up to date by improving efficiency and employing the results of research; the officers of my Ministry will always be willing to co-operate in so doing.

Progress can, and must, be made; so let "Progress" be our motto for the coming year. With this I give you my Best Wishes for 1949.

CHARLES W. KEY.

From the Rt. Hon. Lewis Silkin, M.P., Minister of Town and Country Planning.

I LOOK forward to 1949 as a year in which, despite the restrictions on capital expenditure, substantial progress will take place in the New Towns and a start will also be made on the reconstruction of buildings in the blitzed cities. Constructive planning depends not simply on the proper use by planning authorities of the wide powers in the 1947 Act, but also on the ability of the building industry to provide more houses, factories, schools, etc., of good design and appearance. The success of our efforts in the coming year will be determined largely by the extent to which constructors and architects can together produce more and better buildings.

LEWIS SILKIN.

From the President, R.I.B.A.

IT is at this period of the year more than any other that we are conscious of the happiness both of giving and of receiving. Those who have read my Inaugural Address will know that I refer not only to the presents of the season, but in a wider sense to life in general, and that, whether to receive the best of life or to make the best of what it offers, one must give the best of one's self to it.

I am glad to have this opportunity of thanking those who have so generously responded to the appeal for the Architects' Benevolent Fund. This year, as so often before, it is a case of so few giving so much, and I could wish that the response was wider even if it was a case of so many giving so little.

At this time we naturally look forward to the New Year and what it may have in store for us. If there are any who talk or think of a "return to normality" they, of course, deceive themselves. There is no going back in this world. The spirit of Man, whether guided by religion or not, is one of advance and progress. It is his aspiration to do better; better than before; better than his neighbour. As to normality, that is either the condition that we find around us or the conditions that we make ourselves. There are around us new conditions, some of which may not be of our own making or may not be made as we should wish them.

The chief, perhaps, of these is the Town and Country Planning Act, a piece of legislation as yet only partly comprehended by the general public, which so fundamentally changes conditions that it can well be called revolutionary. Whatever our opinions on its practicability or its effect upon our industry, our profession or our clients, it is the intention of the Central Land Board to operate it and to make it work, and it is their hope that it will not prove too great a deterrent to, or drag upon, development.

We expect in the year ahead the Report of the Working Party. It is far too early as yet to attempt to forecast its results upon our industry. It can hardly be expected to say that it finds all well in the best of worlds. May we at least hope, however, that it will be symbolic of our craft in a constructive approach

both towards a better world for our industry to work in and for a better industry to work for that ideal. That improvements are needed both in the industry and the professions can be shown. Improvements in professional education must come and will require a wider spread of the highest standards on both sides—a more intimate as well as a more extensive appreciation of the obligations, the duties and even the courtesies that each owes in his relationship with the other. Let us hope that we may be able to reassure the nation that at least the foundations and the main structure of the edifice are sound, even if there should be recommended modernisation of some of its features, and that this may be achieved by simple and accustomed methods without any extravagant parade of fantasies or impractical idealism.

As to the "facts of life" in our industry to-day, we must face them in a spirit of realism. We must appreciate that the supply of available materials is the factor that controls both the volume of work that can be done and the manpower of the labour force to do it. Neither that volume or that number can be increased until materials are adequate.

It is inherent in the present state that, until that time of freedom arrives, both material and labour must suffer direction. May there be discrimination in that direction so that the available work is evenly spread to the advantage of all branches of our industry and our profession! Let us hope that the powers that control both the materials and our energies may so direct them that the fullest possible advantage is taken of our desire to give of our best to the benefit both of the community and of ourselves.

The future of architecture and of architectural practice is of grave concern to us all. The R.I.B.A. has constituted a committee specially charged to investigate and report upon this in the shortest possible time. Meanwhile, the general aspects of the case and the proper spirit of approach towards it have already been so well stated in your pages in the leading article of December 10 that there is little to add except the utmost sincerity of hope that this spirit will be understood and appreciated by all.

MICHAEL WATERHOUSE.

From the President, B.I.N.C.

A NEW YEAR MESSAGE! Can it be one of happiness and prosperity, or is it to be continued austerity and depression? Doubtless each would be fitting according to the individual frame of mind which is indicative of our present unbalanced and insular outlook. Instead of viewing the position as a whole, we use an imaginary telescope and, according to which end we spy from, there is obtained a magnified picture of a selected spot or a distant view of no appreciable size.

Has 1948 unfolded any improvement to encourage us for 1949? The answer must be "Yes" where the dominating factor, viz., capital and revenue expenditure, is rightfully assessed.

The Government's concession of increased expenditure for building purposes by all classes is a tardy but nevertheless welcome recognition of the rightful position which the building industry must occupy in our recovery programme. This has had a steadying influence not only on the enormous number of industries allied to building but also on the number of workers directly employed on building. One can, therefore, reasonably anticipate that this beneficial improvement will be duly noted and acted upon by the "powers that be." Too numerous to mention are the demands from every source for new buildings.

And what of those grim daily reminders of the war, the vast bomb-torn sites, representing untold wealth but lying idle and neglected in all our great cities gasping for the buildings so desperately needed?

Unemployment in the building industry and its allies? Not for ten and, maybe, ten times ten years. All together all the time and it will be a happy and prosperous New Year!

FREDK. W. PURSE.

From the Chairman, Quantity Surveyors' Committee, R.I.C.S.

A YEAR ago the building industry looked forward to the immediate future with considerable anxiety and with a feeling of frustration caused by the fact that instead of the gradual improvement in conditions there was a definite deterioration and that normal conditions were as far off as ever. The past year has been a difficult one, but it has ended with some real encouragement in the slight easing of the restrictions on building. We can look back with some satisfaction at the achievement of the industry during the year.

The greatest needs of the building industry are freedom from control and settled conditions enabling a return to firm tenders. While, owing to present conditions, controls and "fluctuations" are essential, it is not too much to hope that during this year there will be a gradual but progressive removal of restrictions and a return to more settled conditions.

The building industry has had a great past; much will be required of it in the future, and I have every confidence that with the co-operation of everyone concerned the industry will meet all the demands that are made on it.

My hope is that 1949 will prove a year of steady improvement in the quantity and variety of work, of closer co-operation of all associated with the industry, and a determination to keep the costs of building as low as possible and so make an essential contribution to the recovery of the country.

T. CUTHBERTSON HILL.

From the President, I.A.A.S.

BUILDING is the most ancient of the arts, and the great building industry of this country—after many generations of development in which manufacturer, merchant, contractor, operative and all professional men involved have performed their respective functions tolerably well under the stimulative action of competition—does not take kindly to the detailed bureaucratic control with which it is beset to-day.

After one of the most devastating wars of history, during which normal building work was suspended and destruction of our cities reached unpredictable proportions, the building industry is faced with the most gigantic and formidable of tasks on which Government control, of the most restrictive character, has been superimposed.

Controls on broad lines to ensure the most economic utilisation of available resources in materials and labour and the determination of priorities in the reconstruction programme are inevitable and desirable, but official interference in the detailed execution of building work is unnecessary, irksome and costly. Moreover, high-level legislation has often been out of step with realities, as is evidenced in the official urge—nay, often direct instruction—to manufacturers to increase capacity and output beyond the real needs of the industry. Brick stocks accumulate, continued mounting stocks of slate are a cause for anxiety, and the demand for plaster products is now about one-half of the total manufacturing capacity of the industry, increased at the Government's behest.

In the opinion of the writer, such fluctuations in the supply and demand are the inevitable outcome of bureaucratic interference with the natural laws which govern this somewhat complicated process. Intense external pressure on British economy resulted in the Government's decision a year ago to cut down the building programme in the light of the need to reduce capital expenditure, and of the shortage of materials, particularly steel and timber.

Happily, domestic war damage repair is now well advanced and is not such a heavy drain on our resources, and the increase of the unrestricted limit to £1,000 for some classes of industrial building is a most welcome indication of some approach to more normal conditions in the building industry.

Fundamental research in building science and practical developments to meet the present shortages have set higher standards of design to permit increased work-

ing stresses, and new materials and construction, such as structural framing in welded steel, aluminium alloys, rigid frame construction, shell construction and prestressed concrete, are now available to the designer and constructor. What unique opportunities await the resourceful!

Set the industry free, call a halt to the growing tendency to increased Government control, and we will undertake the gigantic task of reconstruction with a zeal that frustration is to-day in danger of suppressing.

CHARLES W. GLOVER.

From the President, N.F.B.T.E.

OPTIMISM is traditional at this time of year, but even discounting the effect of the natural festivity associated with Christmas and the New Year, I take an optimistic view of the prospects for 1949, subject always—inevitable proviso!—to the international situation.

There is a growing sense of realism abroad in the land. Employers are alive to their responsibilities and their opportunities. They are keen to make use of these opportunities. They recognise that the past is past: they are looking more and more to the future.

We have before us the examination of the building industry by the Working Party, which for many of us has meant a vast amount of work during recent months. We shall very shortly be sending in our evidence. Personally, I base very considerable hope on the report of the Working Party. I believe it will show up the hollowness of much of the criticism, uninformed and often stupid, to which the building industry is at times subjected, and it will give the public a more reasoned basis than it has at present for appraising our achievements—and they are considerable—and our hopes and aspirations.

For the rest, the building industry in general, notwithstanding the obstacles to its progress, is working well. It will do better still when materials are plentiful, and we all realise that a full day's hard work, mixed with the ingredients of enterprise and incentive, is the only basis on which lasting economic stability can be built.

F. M. SLEEMAN.

From the General Secretary, N.F.B.T.O.

I AM glad to have this opportunity of saying a few words to the readers of *The Builder* in this New Year Number. The building industry is a vast concern, and it is up to everyone in it or connected with it to make it a success—that is, a success from the point of view of the public welfare by having buildings of good quality to serve domestic, industrial and commercial purposes; from the point of view of the operative by having conditions sufficiently attractive to encourage the best work under a system of full employment; and from the point of view of the employers . . . but there, I must leave their spokesman to state his own case! In any event, my best wishes to you, Mr. Editor, and your staff, and may you long continue with your good work.

R. COPPOCK.

From the Chairman, National Joint Production Council.

THE building industry, despite the threat of the economic crisis, has been allowed to do, and has in fact done, far more than I had expected when the year began, and unless the international situation gets worse, we can, I feel, look forward to steady progress during 1949.

As in the previous year, the work of the Joint Production Committees and of the Production Officers during 1948 has not been spectacular, and much of their energy has continued to be taken up in dealing with difficulties about materials. But materials are becoming more freely available, and it should be possible in 1949 for more time to be devoted to the making known to builders of the results of the research carried out by the Building Research Station of the Department of Scientific and Industrial Research and by the Ministry of Works. This will be an extension of one branch of the work to which they have given a lot of time during 1948—the organising and running in all parts of the country, in conjunction with the Ministry of Works, of mechanical plant demonstrations, not in exhibition halls but on actual building sites. These demonstrations have been widely attended and have been most useful in enabling builders not only to see the latest devices in operation but to compare one type with another in actual performance.

One of the first jobs in 1949 will be to re-examine the functions of both the Joint Production Committees and the Production Officers. They, I know, agree with me that we must go all out to reduce costs, and I am certain that, whatever 1949 may bring forth, they will rise to the occasion. I thank them for their good work during 1948, and send them my best wishes for the New Year.

G. W. BUCHANAN.

From Sir George Gater, Chairman of the Building Apprenticeship Training Council.

THE most crucial problem in the field of Building Apprenticeship in 1949 will be the recruitment of an adequate number of new apprentices. The best available figures show that if the present force of craftsmen is to be maintained, 22,000 new apprentices will be needed each year. The rate of recruitment for 1948 fell seriously below this figure and, unless it can be appreciably improved, there will be a shortage of craftsmen in future years, when their services are likely to be in urgent demand.

Sir George Gater, K.C.M.G.

I send my best wishes for 1949 to all in the building industry, both employers and operatives. On employers I would urge the importance of apprenticeship, and would ask each individual employer to make within his resources his maximum contribution to the solution of the problem of recruiting and training apprentices. To all apprentices, actual and potential, to their parents and to all who who advise them I would say that the building industry has a vast field of work before it in new construction and in repairs and renewals, and that the well-being and efficiency of the industry is vital to the prosperity and happiness of our national life.

Let all of us who bear any responsibility for recruitment and training resolve that in 1949 we will take in close co-operation all possible steps to secure the adequate recruitment of craftsmen and the maintenance of the highest standards of craftsmanship.

GEORGE GATER.

From the President, Federation of Associations of Specialists and Sub-contractors.

NINETEEN-FORTY-EIGHT has been a better year than most of us dared to hope 12 months ago. It began at a time when conditions in the building industry seemed to be in the same critical state as those of the nation as a whole. The more pessimistically in-

(*Concluded on page* 46.)

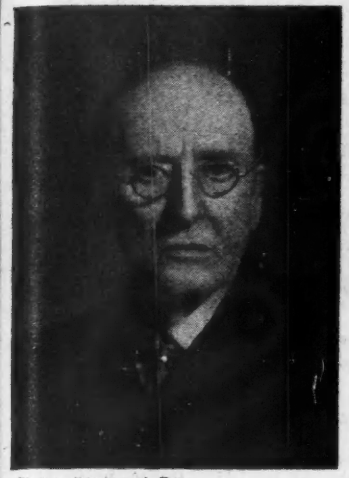


Photo: Elliott and Fry.

C. F. Annesley Voysey (1857-1941).

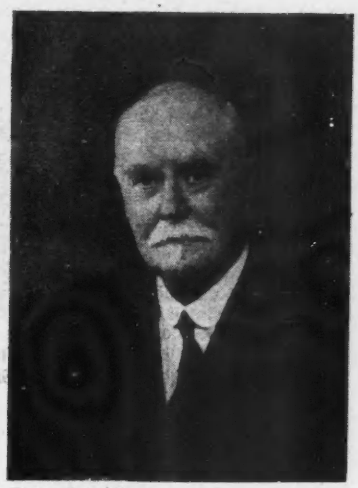


Photo: Lafayette.

Sir Reginald Blomfield (1856-1942).

VOYSEY AND BLOMFIELD

A Study in Contrast

BY MARTIN S. BRIGGS, F.R.I.B.A.

ON seeing the title of this article, the reader will presumably ask: "Why bracket these two men together? What on earth is the connection between them?" My answer or excuse is simply that, having had to make a simultaneous study of their respective lives and work for another purpose, the contrast between them appeared to me so striking and so illuminating that it suggested the following brief essay. Like those two famous literary rivals of a generation ago—H. G. Wells and Arnold Bennett—they were contemporaries, they came from a similar stratum of society, and they both became notably successful in their chosen profession; but, again like Wells and Bennett, they differed profoundly in their physique, mentality, temperament, ideals, ambitions and outlook on life. So, while Voysey and Blomfield were born and died within a year or two of each other, while both were reared in country parsonages and both became celebrated, there is hardly any other respect in which there was the slightest resemblance between them.

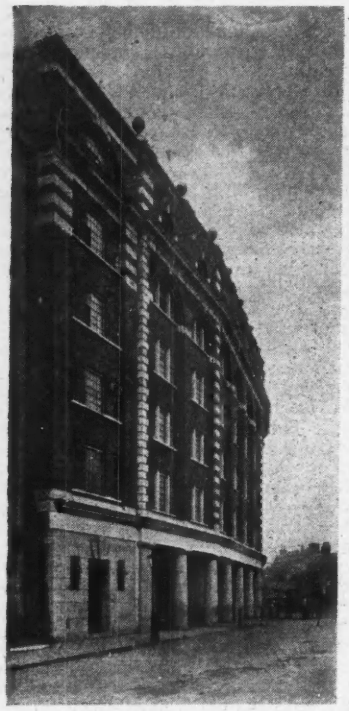
Even the similarity in their parentage is more apparent than real. Voysey's father, the Rev. Charles Voysey, was a graduate of Oxford and a clergyman of the Church of England, facts which suggest orthodoxy at least; but he was expelled from his Church in 1871 on account of his heterodox views, more especially because of his inability to accept the doctrine of everlasting punishment. He then proceeded to establish a sect of his own, and preached in the famous Theistic Church in Swallow-street, off Piccadilly, for nearly 30 years. Dissent may have been in his blood, for his great-great-grandmother was John Wesley's sister, and his son, C. F. A. Voysey (1857-1941), the architect, was proud of his family tree (going back far beyond the Norman Conquest), which he drew out in his beautiful and characteristic lettering on an enormous sheet of paper. He resembled Wesley so closely that on one occasion he sat as model for a portrait of the great evangelist. He was himself something of a freethinker and a rebel.

Sir Reginald Blomfield (1856-1942) was also a stormy petrel in his way and loved to attack established institutions, yet was never really unorthodox. His father, too, was a country clergyman, but his mother was the daughter of a famous bishop. Sir Reginald tells us in his *Memoirs* that his ancestors in the 17th century were nearly all on the Puritan side, and adds: "This engrained Puritan, or perhaps one should say rebellious, instinct may account for certain abnormal elements of a rather uncertain character," i.e., his own. Those *Memoirs*, by the way, published in 1932, provide most racy and amusing reading. They tell us everything we want to know about him, as he saw himself, up to his 75th year; and one could wish that Voysey had left us an equally vivid record of his own less spectacular career, about which information is rather meagre.

The childhood of the two men presents a vivid contrast. Voysey, the eldest of a large family in straitened circumstances, seems to have been a timid, repressed little boy, a slow learner who could not read till he was nearly 14; and his education up to that date was undertaken by his father. He then went to Dulwich College, but was regarded there as an unsatisfactory pupil and left within two years, thereafter undergoing a short spell of private tuition. Blomfield describes with gusto his own childish escapades, and states that at seven years old he was reported as having "the strength of Hercules and the temper of the Devil." He was duly sent to "a fashionable private school at Brighton" in 1865, where he "received 16 thrashings in one term." His subsequent passage through Haileybury was entirely satisfactory, for he ended his schooldays there as captain of his house and a member of both the XI and the XV. In 1875 he won a leaving scholarship to Oxford and also a Stapledon scholarship at Exeter College. A year earlier, Voysey had been articled, at the age of 17, to J. P. Seddon, an architect of the Gothic Revival school, and his latent artistic ability soon developed, so that even before his five years pupilage was over he was de-

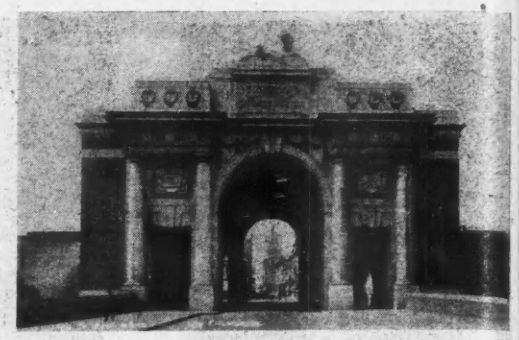
"The Pastures," North Luffenham, Rutland (1901).
C. F. A. Voysey, Architect.

"Moor Crag," Windermere (1898).
C. F. A. Voysey, Architect.



Warehouse, Greycoat-place, Westminster (1895). Sir Reginald Blomfield, Architect.

signing buildings on his own account. Meanwhile, his formidable contemporary was doing brilliantly at Oxford, playing cricket and Rugby football on several occasions for the University though never obtaining a Blue, but working so hard that in 1879 he secured a First Class in Greats. "I attended some of Ruskin's lectures," he writes, "but I heard so much about Ruskin and so little about anybody else that I gave it up. The atmosphere of rapt adoration with which Ruskin and all that he said was received by the young ladies of Oxford was altogether too much for me." He remarks that at this stage he was "keenly interested in art in a very amateur sort of way," but attributes his choice of a profession to the circumstance that his uncle, Arthur Blomfield, whose office he entered in 1881, "was already a successful architect." However, uncle and nephew did not agree, and Reginald left the office within two years after a mysterious "misunderstanding," the first of many in his lively career. Voysey likewise disclaimed any divine call to architecture, and stated in later life that he entered the profession merely because it was at that time the only one which did not insist upon an entrance examination; but heredity may have unconsciously influenced him, for his grandfather, Annesley Voysey (1794-1839), had been an architect. When his pupilage was over, he became an assistant to George Devey, whose lucrative practice consisted mainly of huge country houses in the neo-Elizabethan style.



The Menin Gate, Ypres (1923-26). Sir Reginald Blomfield, Architect.

In 1884 we find the two men more or less abreast, for both started independent practice in London about that time. Blomfield had previously spent three months in touring France and Spain, and returned with a crammed sketchbook and the illuminating discovery that he did not like Gothic. Voysey never travelled, and throughout his life he disapproved of foreign travel for architectural students. For the first few years of practice both men had a lean time. Voysey's commissions before 1890 or thereabouts were mostly small buildings, many of them for artists or manufacturers encountered as a result of his designing of furniture, wallpapers and fabrics and other decorative accessories with which he filled up his time and his purse when architectural work was lacking. His buildings in those early years resembled the work of Norman Shaw and George Devey in their quasi-Elizabethan style, with brick or half-timbered gables and other features characteristic of the period. Almost from the beginning they were illustrated in the technical Press, especially in the *British Architect*, and one published but imaginary design—for a small house—is said to have brought him his first commission. His chief buildings at this stage, the South Devon Sanatorium and a hotel adjoining, display nothing of the famous Voysey manner that was soon to emerge, but we find it as early as 1889 in a house at Bedford Park, where extreme austerity, roughcasted walls, and rows of small leaded windows with square mullions revealed the embryo of his future style, and indicated a break with the work of Shaw, Devey and Ernest George. It may be noted here that Voysey married in 1885, Blomfield in 1886, courageously (or rashly) considering their stage of worldly progress.

"The Orchard," Chorley Wood, Herts. (1900). C. F. A. Voysey, Architect.

Blomfield, like Voysey, did not find practice to be easy going at first. The enormous list of his executed buildings, published in the *R.I.B.A. Journal* (vol. L, p. 88) after his death, contains very few examples earlier than 1890, and most of them were small houses or minor alterations to churches. So he, like Voysey, sought for some means of augmenting his slender earnings and found it in writing, to the great benefit of posterity, thanks to sound scholarship acquired as the result of a thorough classical education. He began with articles on Sussex ironwork and half-timbered houses; then came a series on English architects of the Renaissance. His first book, *The Formal Garden in England*, published in 1892, was followed in 1897 by his masterly *History of Renaissance Architecture in England* in two volumes, and in 1901 by his delightful *Short History* of the same period. His researches for these books brought him into touch with many influential and aristocratic owners of great houses and gardens, and soon led to important commissions to alter, enlarge or restore several historic mansions, such as Apethorpe, Brocklesby Park and Chequers, during the ensuing decade. One other design of his earlier days must be mentioned here: the fine and massive warehouse for the Army and Navy Stores in Greycoat-place, Westminster, where his preference for traditional Renaissance forms is not so evident as in his later work.

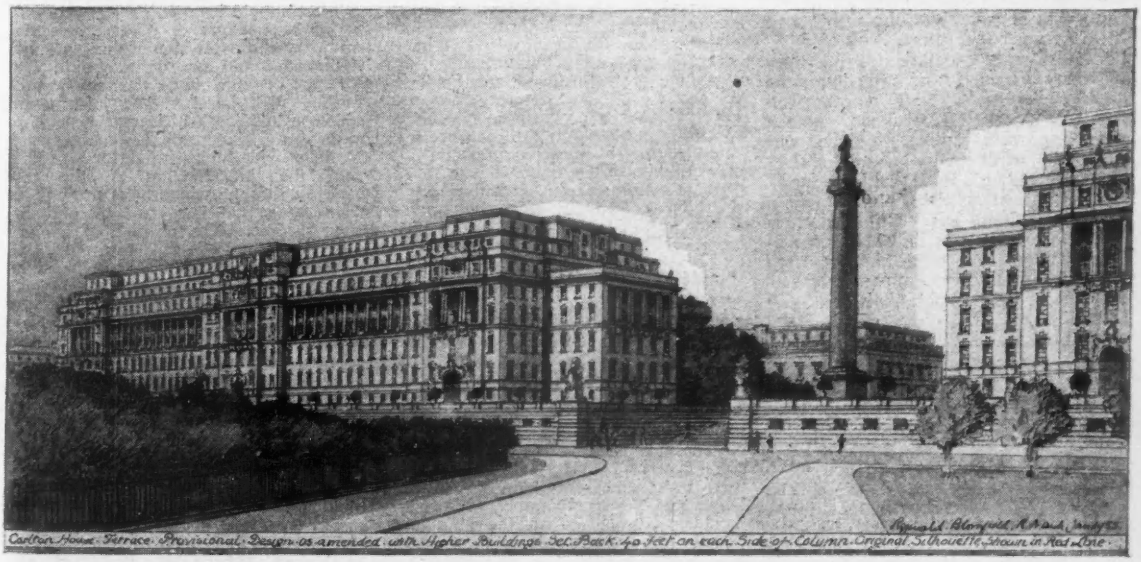
In 1905, then, we find Blomfield with his foot on the ladder, but better known as a scholar than as a practitioner; whereas Voysey had shot right ahead as a most original designer of houses, mainly in the country. His reputation abroad was even higher than in England, for the German writer Hermann Muthesius had published between 1900 and 1904 several books on domestic architecture in which Voysey's work was lauded to the skies. It was about 1900 that both Voysey and Blomfield came into my youthful ken. Blomfield was one of the Committee that founded the

Architectural Review in 1901, and he contributed to it regularly till 1905, when he had a dispute with the proprietors. Out of my meagre pocket-money I subscribed to the *Review*, and read his learned articles with awe and his *Short History* with pleasure; but I experienced a real thrill when I saw two genuine Voysey houses on the shores of Windermere, with all the characteristic features and individual tricks of design that had been made familiar to us in the provinces by the *Studio* magazine and to Londoners at every exhibition of the Royal Academy. A year or two later, the president of our local architectural society visited Voysey at his house in the hope of inducing him to give us a talk in Leeds, and told us, on returning, how the great man's study formed a harmonious colour-scheme, which certainly included carpets, curtains, wallpaper, blotting-pad, and—I think—quill pen.

Voysey had, in fact, established a vogue; and, almost up to the First World War, he designed a vast number of houses in a style which was entirely individual, and, so far as he could contrive it, consistent. Probably most of his patrons were so anxious to possess an authentic Voysey house, during the so-called "Mauve Decade" of the 'nineties, that they gave him his head; but, when they proved recalcitrant, he was quite capable of resigning his commission. Generally speaking, his prescription for a country-house at any date between 1890 and 1914 (his productive period) required an asymmetrical but not eccentric plan, roughcasted brick walls with battered buttresses at the angles, rooms 8 feet high regardless of size, steeply pitched slate roofs with gables, chimneys sometimes battered and always capped with black chimney-pots, a black plinth, long low leaded windows with square stone mullions and dressings, square-framed oak panelling in the principal rooms (if possible), and architect-designed mantelpieces and ironwork. He often said that an architect ought to design everything in the house down to the toothbrushes, and approached nearer to that ideal than anyone else, before or since his day. This is not the place for a long list of his country houses, but the home he built for himself at Chorley Wood in 1900, and christened "The Orchard," is an example of his work at its best, and remains substantially unaltered. "Spade House" at Sandgate (1899-1900), for H. G. Wells, figures in Wells' *Autobiography* as a successful venture, Voysey being explained as "that pioneer in the escape from the small snobbish villa residence to the bright and comfortable pseudo-cottage." That is not a bad description. Voysey was certainly the most active person in the revolt against Victorian fussiness and "period stuff." His houses, though simple and very English, were not cheap, and they were full of little mannerisms. The harmony that he generally achieved throughout was a great merit.

Apart from country houses, his output was relatively small. There were town houses in Chelsea at Hans-road and Swan-walk, various studios in London, a couple of country inns, a cottage hospital, Atkinson's perfume shop in Bond-street, and a remarkably "functional" little factory for Sandersons at Chiswick (1902). He competed unsuccessfully for three public buildings, but those designs were far below his domestic standard. He frankly disliked classical architecture, Georgian or otherwise, regarding it as un-English, and remained a Gothicist at heart. A strenuous and rapid worker, he did most of his drawing himself, leaving the rest to his pupils. He used a hard pencil and eschewed indiarubber. He would make complete sketch-plans for a house, or a design for a wallpaper, in a single week-end. In professional politics he took no part, and here the contrast with Blomfield is particularly striking. Voysey was thoroughly at home in the Arts Club and the Art Workers' Guild, of which he became Master in 1924, but he kept aloof from the R.I.B.A. until that Institute elected him a Fellow in 1929. In 1940 he was awarded the Royal Gold Medal for Architecture. The outbreak of war in 1914 extinguished his large practice, but his vogue had begun to wane before that. From 1917 onwards he lived alone in a service flat in St. James-street, spending much of his time at the Arts Club, always ready for a chat and an argument. In the last 25 years of his life he continued to do some desultory designing for manufacturers, and executed a few war memorials, but his day was done.

Meanwhile Blomfield had risen to eminence. He continued to write, producing his important *History of French Architecture from* 1494 *to* 1774 in four volumes between 1911 and 1920. Other and later books, besides several volumes of collected articles and lectures, were his own *Memoirs*, (1932), *Modernismus* (a witty and slashing attack upon new fashions in architecture, 1934), and biographies of *Vauban* (1938), and *Norman Shaw* (1940). His professional career became a series of triumphs punctuated by controversies. He joined in the terrific battle over registration at the Institute in 1891, contributed to the famous symposium, *Architecture: a Profession or an Art?* and resigned from the R.I.B.A.; but returned to it in 1905, did valuable service on the new Board of Architectural Education, and filled the office of President with great distinction in 1912-14. In 1913 he was deservedly awarded the Royal Gold Medal. He joined the Art Workers' Guild in 1885, but resigned from it in 1894—another disagreement! He was also a member of the Arts Club, and was Chairman in 1915 when he resigned owing to yet another dispute. Naturally he knew Voysey well, but there is no mention of him in the voluminous *Memoirs*, and they were poles apart. Voysey was an artist pure and simple, Blomfield a scholar and a


Carlton House Terrace. Provisional Design as amended with Upper Buildings Set Back 40 feet on each Side of Column. Original Silhouette shown in Red Line.
Reginald Blomfield R.A. and Partners

Design for Rebuilding Carlton House Terrace (1932). Sir Reginald Blomfield, Architect.

politician as well. He became A.R.A. in 1905, Professor of Architecture at the R.A. in 1906, and R.A. in 1914, but severely criticised much of the Academy's organisation. He really enjoyed controversy, and describes various "excellent fights," including the famous battles over the London City Churches, Waterloo Bridge and the projected Charing Cross Bridge. His last conflict occurred in 1932, when the public, who had come to regard him as *arbiter elegantiarum* and a crusader for saving historical monuments, were scandalised to learn that he had submitted designs for a tall office-building in Carlton Gardens and that the Royal Fine Art Commission, of which he was a prominent member, had hastily approved it. People speedily realised that this block would dominate and interrupt the sky-line of Nash's Carlton House Terrace as viewed from St. James's Park. An influential "Carlton House Terrace Defence Committee" of 400 members was formed. Blomfield retaliated with a pugnacious and able speech at the Authors' Club, derided Nash's architecture and his range of hollow cast-iron "Doric" columns, and published a design for rebuilding the whole of Carlton House Terrace. There was a heated debate in Parliament early in 1933, but the scheme had gone so far that it could not be stopped, and the building in Carlton Gardens was duly completed as we see it now.

His amazingly frank *Memoirs* record three major disappointments to his boundless ambition: his failure to become Surveyor to St. Paul's Cathedral, Chief Architect of New Delhi, and President of the Royal Academy. His self-confidence was phenomenal, even if justified, and few scholars would have written a book-review so scathing as one of many pages that he published in 1902, before he became really famous, about a volume by a professional colleague. His practice grew rapidly, developed not only by his ability and his immense capacity for work, his massive scholarship and his Oxford background, but also by his considerable social gifts. A man of fine presence and physique, he could play nearly all games well (whereas Voysey played no games), persisting with cricket till he was nearly 70, with tennis long after that, and with billiards to the end.* He took up hunting at 48, was handy with a gun, and fitted easily into country-house life. He was indeed a man of many talents. Above all, he possessed immense vitality and enjoyed life in all its aspects with Elizabethan gusto.

He was over 80 when he fell off a ladder while trimming a tall hedge, and broke his arm, but a few weeks later he suddenly appeared in London to collect his tennis kit! Legends grew up about him. On one occasion, he is said to have timed the speakers at a R.I.B.A. gathering with an hour-glass and relentlessly called them to order with an auctioneer's hammer. He kept a hassock handy in his billiards-room so that he could relieve his feelings decorously by kicking it whenever he missed a stroke.

The impressive list of his executed buildings includes the Menin Gate and much other work for the Imperial War Graves Commission in 1918-26, the remodelling of the Regent-street Quadrant and adjoining buildings in Piccadilly Circus in 1910-30, Lambeth Bridge, an art gallery and a public library at Lincoln, the "Headrow" at Leeds, the United University Club in Pall Mall, Lady Margaret Hall at Oxford, and a host more. It is all "scholarly" architecture, too scholarly for some critics, and it is reminiscent of the French and English masterpieces of the Renaissance that he knew so well, but unquestionably Blomfield was a great man and deserved all his success, which he earned by sheer ability and hard work.

It remains to be seen whether Blomfield will rank higher than Voysey in the gallery of the immortals. In 1931, a critic wrote in the *Architectural Review* that "only in England is Voysey not taken at his true value, for he is dismissed as '*art nouveau*' or even 'arty,' and the extravagances of new architecture at the end of Victoria's reign are considered more of a joke than they really are." That was only 17 years ago, but fashion in architecture is very fickle, and now his reputation is rising again. Admittedly, he was mentor to C. R. Mackintosh, a recognised pioneer of the so-called "Modern Movement," but he showed little enthusiasm for the cosmopolitan style that began to penetrate England between the wars. Such houses as "The Orchard" at Chorley Wood will always make an appeal to men of my generation; we grew up with that tradition and it is very English. But only a rash man would dare to prophesy whether future historians will regard the burly and jovial octogenarian in the billiards-room of the Athenaeum as a greater architect than the quiet little figure sipping his sherry in a corner of the Arts Club, and dreaming, perhaps, of the days when his work was the cynosure of half Europe.

* A member of *The Builder* staff well remembers an occasion, shortly before Blomfield's death, when, on unrolling a set of drawings for his inspection, a rubber band flew off and struck Sir Reginald in the face. "Dammit, boy," cried the outraged architect, "you've spoilt my billiards eye."—EDITOR.

Notes on the Planning and Construction of FACTORIES

Prepared in the office of

F. R. S. YORKE, E. ROSENBERG AND C. S. MARDALL

WHEN an architect starts work on the plans for a factory, he is likely to be faced with quite a number of predetermined conditions. The site has usually been chosen and its position in relation to transport facilities will be a powerful influence on the layout; the client will have at least a general idea of the accommodation required—in fact, he will often have gone far beyond this, even up to the stage of preparing layouts showing the proposed position for every item of plant; and at the present time it is also probable that preliminary discussions with the Government department concerned with the scheme will have led to decisions on the approximate floor area and total cost which would be likely to be approved. The buildings must also satisfy the requirements of the Factories Act and the various statutory rules and orders which aim at ensuring reasonable working conditions, and they must also follow normal bye-law requirements. The final problem of the architect is to satisfy all these conditions, and at the same time to produce a building which will provide a stimulating environment and will be æsthetically satisfactory.

THE GENERAL LAYOUT

The word "factory" covers a wide range of types of building, from a small bare workshop containing only a few benches, to acres of engineering shops packed with heavy forges, presses and furnaces. Many of the points which are discussed below are of general application, but they apply particularly to the most usual type of factory of medium size—say from 20,000 to 100,000 sq. ft. total floor area—for light or medium industries. Such factories will usually include a number of ancillary buildings, but the production area is the essential part of the scheme and the planning of this area must take precedence over other considerations. The architect should obtain the fullest possible understanding of the work which will be carried out in the factory and of the clients' requirements generally. It will be found very helpful if full information can be obtained from the clients at a very early stage by submitting a detailed questionnaire for them to answer; they should be urged to give serious consideration to their replies as these will form the basis for the layout of the factory, and it is often fatally easy to obtain preliminary information which the clients may wish to change at an inconveniently late stage.

In order to avoid such difficulties, the architect should keep in close touch with the works manager or other representative with whom all doubtful points can be discussed and agreed; he should also, as far as possible, study the factory processes at first hand. The information gained in this way will lead to a decision on the general layout of the factory which should provide for a straightforward flow from the introduction of the raw materials, through whatever operations are necessary to the final packing and dispatch sections. The position of connections to road or rail transport will obviously have an important influence on this general layout. Generous storage space is necessary at the receiving and dispatch sections, and also at intermediate positions.

Employees' access to the factory, with clocks and card racks, should usually be separate from goods entrances and from the office entrance; the administration block should have easy access to the factory but, where the latter is noisy, the two may be separated by stores or lavatories to act as a barrier. Lavatories, first-aid rooms and canteens are discussed separately in a later section; other ancillary buildings such as boiler houses, gatehouses, substations, etc., will also have to be suitably sited, but details of these buildings are not within the scope

of this article, which is chiefly concerned with the factory itself and the welfare of the work people. These constitute such a large subject that the following notes can only point out briefly some of the most important matters to be considered, and give some hints as to sources from which more detailed information can be obtained.

PLANNING AND CONSTRUCTION OF THE PRODUCTION AREA

In some cases multi-storey buildings may be found suitable but in general the single-storey factory is likely to remain the most usual for average-sized works, and the following notes apply principally to this type. The ideal production building from the point of view of the factory owner would be four walls and a roof enclosing an area of the required size with the entire space clear for factory operations, and with complete freedom to rearrange the layout as often as desired. In practice, the design will have to be a compromise between this ideal and the limitations imposed by the need for economy, which calls for short spans and therefore intermediate columns dividing the building into bays; for normal light industries a span of about 40 feet is generally satisfactory, and very large spans are only justifiable where the special requirements of the factory prohibit intermediate columns.

The construction will, almost inevitably, be framed, using either steel or reinforced concrete. The use of steel reduces the amount of site work and gives rapid erection, adaptability and convenience in fixing services, etc. The use of reinforced concrete reduces the quantity of steel required, which may be an important consideration at present. *In situ* concrete may be used in normal beam and slab construction or in barrel vault or dome forms in thin shell construction to cover large spans. Difficulties may be experienced on account of site work and the shortage of timber for shuttering; for these reasons pre-cast concrete framing has advantages where spans are not too big.

Where large plant is to be installed, this will govern the height of the roof; travelling cranes normally require a minimum of about 20 feet clear height from floor to underside of roof beams but this dimension will often have to be increased. In other cases, the height will be determined simply by the need for adequate lighting and ventilation, and may be reduced to 10 feet clear, although a rather greater height is normally desirable; this question may be influenced by the Factories Act, which calls for a minimum of 400 cubic feet per person (height over 14 feet to be disregarded in making this calculation).

The form of the roof is influenced by the need for providing natural lighting, as some form of roof lighting will be needed in all except small single-bay factories—that is assuming that natural light is required, as it is not likely that there will be much use in this country of entirely artificially-lit factories, examples of which have been built in U.S.A. Various types of roof lighting were examined in a recent article by J. B. Bickerdike (See R.I.B.A. *Journal*, September, 1948). They can be broadly classified as:

(a) Glazing on the roof slope;
(b) North light;
(c) Monitor;
(d) Special types in barrel vaults and domes.

These types have their advantages and disadvantages for various conditions, and the article referred to above should be studied for a detailed discussion of these points. (Desirable standards of daylighting will be mentioned later under "Working Conditions.")

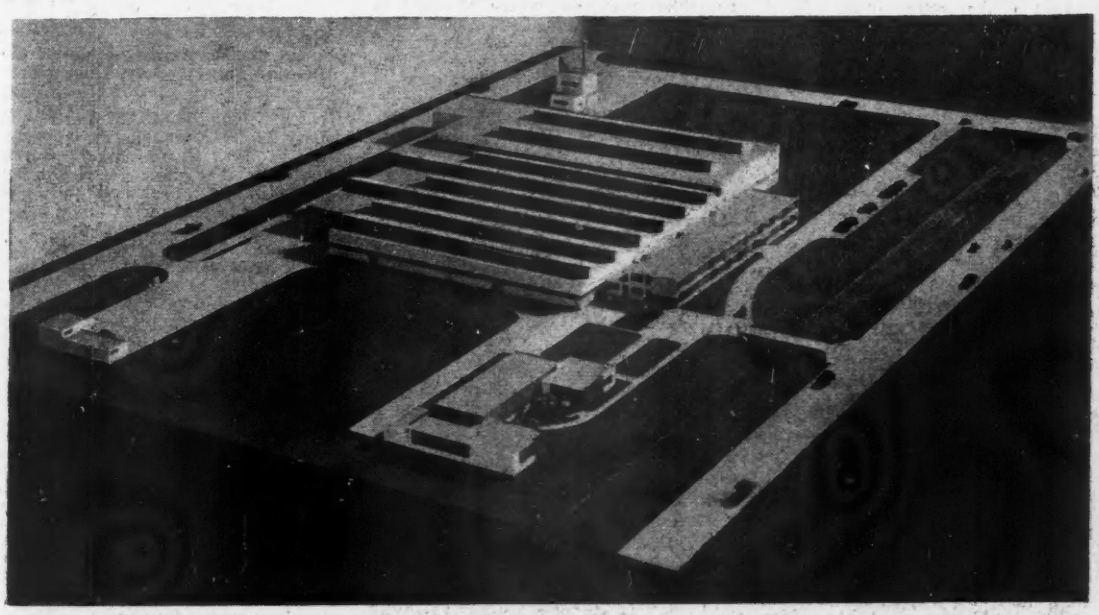
External walls can be non-structural infilling with glazing as desired; walls below windows should be brick or other material which can stand up to hard wear. Above windows, light sheeting can be used, but here (and where similar materials are used for roofing) it should be remembered that insulation is needed to avoid uneconomic heating costs.

For light industries, such as those where women work at benches, flooring with some resilience is desirable for comfort and warmth, in preference to the concrete with granolithic or similar finish which is necessary where wear is heavier. Structural floor slabs may have to be designed to take heavy superimposed loads, especially in storage bays, and in some cases concrete foundations for machines will be required, although in light industries all or most of the plant can simply be bolted to the normal floor slab.

Possible future extensions should be considered when designing the factory, and provision made in the foundations, etc.; allowance should also be made in the design of the structural framework and bases for additional superimposed loads if there is any possibility of cranes, monorails or similar weight-carrying installations being fixed to the structure in the future. It must be emphasised that allowance for future alterations and development is a vital factor in factory planning; constant changes of layout are a normal feature in the work of many industries.

It is usually not necessary to provide much partitioning in the factory; where it is required, standard steel and mesh partitioning about 7 ft. 6 in. high is convenient and easily rearranged to suit changes of layout. Offices for foremen, etc., can be in similar partitioning, but with glass instead of mesh and with the addition of ceilings. Entirely enclosed rooms may also be required for storage of valuable goods, for special delicate processes or to prevent fumes from spreading.

The choice of materials and finishes generally is difficult, as the need for economy usually almost prohibits materials which would otherwise give the required clean, bright appearance, coupled with durability, to stand up to the particularly hard wear to which they will be subjected. Normal factory wall finishes are likely to be washable distemper or cement paint on fairfaced brickwork; wherever possible, lavatories, etc., should be tiled, especially walls behind



NORTH EASTERN TRADING ESTATES. Factory for Messrs. Sigmund Pumps, Ltd. From a photograph of a model showing production building in centre, with space for expansion at either side; the office block faces the road on the right-hand side and the canteen is in the centre foreground. Yorke, Rosenberg and Mardall, Architects.

wash basins which otherwise will probably be impossible to keep clean; first-aid rooms must have tiled or oil-painted walls and a clean, impervious floor finish.

TECHNICAL SERVICES

The provision of technical services of many kinds is an important part of factory design; details of requirements must be obtained and allowance made in the early stages of planning; for instance, the need for fitting in large ventilating ducts may influence the design of the building as a whole. It is not economically possible to conceal the pipes and cables in a factory as can be done in other classes of buildings; in any case, it would not be desirable, as easy access for maintenance and for making alterations and new connections is of such great importance. At the same time, it is well worth while to take some trouble to ensure that runs of services are arranged neatly and efficiently, thus giving a neat appearance as well as simplifying alterations.

This means that the structural elements of the building should allow for easy fixing of straight runs of services under the roof and along the walls; it is an advantage if stanchions can stand clear of the external walls, leaving a suitable space to allow pipes to be fixed to the wall and to run straight through. It is normally not possible to arrange fixings in advance, except at main points of entry and other special positions; where the frame is of reinforced concrete, standard openings may be left in suitable positions in beams to enable pipes to run through. Fixings to structural steel can be by clips and bolts which do not require any drilling of the steel.

The special need for adaptability to meet the need for frequent alterations in the layout of plant makes it desirable that services should be, wherever possible, in the form of a standard grid from which connections can be taken to any desired point. In designing the system of services, allowance must be made for possible increases in the plant installed in the factory as well as for possible enlargement of the factory itself.

Apart from heating, ventilating and lighting services, which are discussed below under "Working Conditions," a wide range of services may be required in connection with the processes carried on in the factory, including electricity, steam, compressed air, vacuum, gas, water, drainage, waste disposal, telephone, intercommunication system, and loading, and handling facilities such as cranes, hoists and conveyors. Fire precautions are important and should be considered in good time, as a sprinkler system may be necessary or desirable, and this will influence the layout of the water supply.

Standard colours for painting the various types of services are laid down in B.S.S. No. 617: 1942; the use of these simplifies identification and, where the runs of pipes are neatly fixed, gives lines of colour which can look bright and attractive.

WELFARE

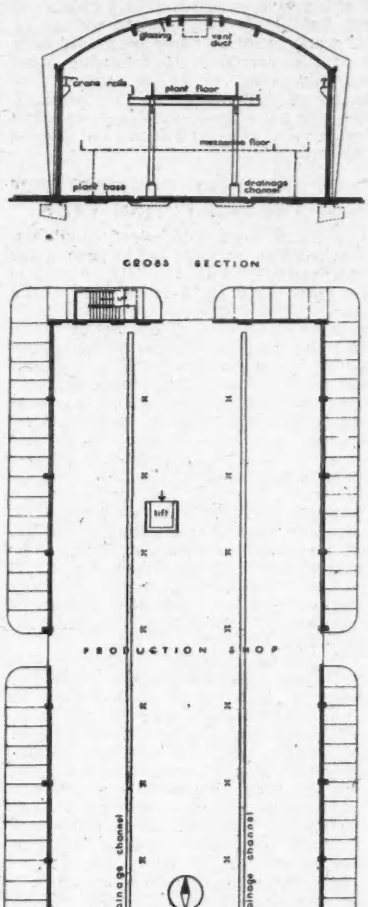
The term "welfare" is used in a very wide sense when it is applied to modern factory conditions. First, it applies to the physical conditions under which work is carried on; second, to amenities such as the provision of canteens, facilities for recreation and medical treatment, and convenient transport to and from work; and third, it is applied to the need for a pleasant environment which can result from good design and well planned layout, and to the need on the part of the occupants for efforts to keep the buildings and site in good condition and free from unsightly accumulations of rubbish and scrap materials. This question of providing attractive surroundings is clearly of great importance, but it is not one on which much can usefully be said in this article; it is hoped that the accompanying illustrations will show the new standards which contrast with conditions in the older type of industrial buildings.

The practical aspects of welfare call for discussion in greater detail.

WORKING CONDITIONS

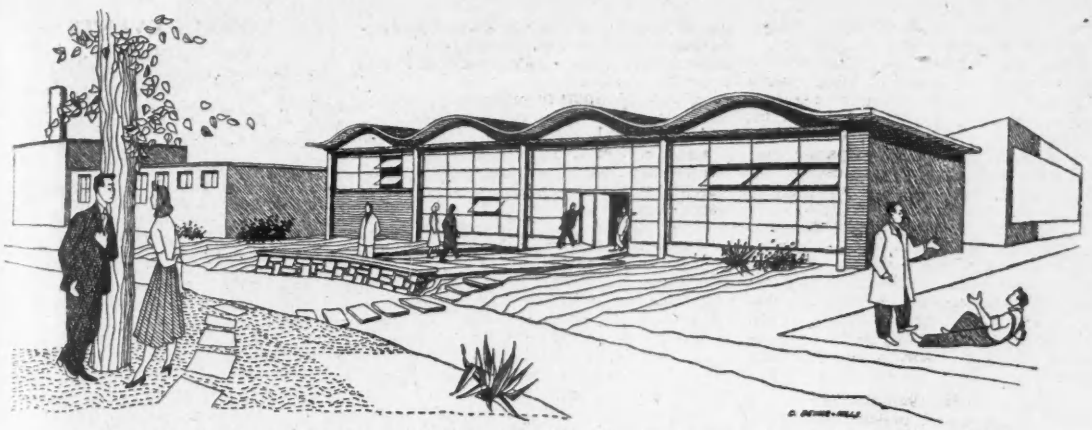
The Factories Act, 1937 (amended 1948), sets out various provisions for the comfort and safety of employees; it should be studied together with the statutory rules and orders made under the Act, and with the relevant Welfare pamphlets prepared by the Ministry of Labour and National Service. Plans should be discussed with the Factory Inspector at an early stage as his requirements may call for modifications in planning. The R.I.B.A. *Journal* for January 29, 1947, contains an interesting paper by Mr. H. G. Maule (former Inspector of Factories) on Health and Welfare in Factories, and this gives many tips as to the kind of things inspectors look out for.

HEATING AND VENTILATION: The Factories Act calls for a "reasonable" temperature to be maintained in workshops, which is defined as not less than 60 deg. where sedentary work is carried on; it also requires effective means of ventilation, and regulates atmospheric conditions where special processes cause heat or humidity. Heating and ventilation must be considered together, as the amount of heat required depends on the rate of air change induced by whatever system of ventilation is adopted; these matters are dealt with in detail in Welfare Pamphlet No. 5. Normally, air changes should be at least 6 per hour; it may be possible to provide adequate ventilation by opening parts of windows and by roof extractors or louvred outlets, but in most cases these should be supplemented by extract fans and possibly also intake fans. Many industries will also need high velocity extract from individual machines producing dust or fumes.



Ground plan and cross-section of the May and Baker factory, Dagenham.

MAY AND BAKER FACTORY, DAGENHAM. View at first-floor level, showing roof lighting. Edward D. Mills, F.R.I.B.A., Architect.



CANTEEN FOR A CLOTHING FACTORY, DAGENHAM. Yorke, Rosenberg and Mardall, Architects.

A full plenum system may be considered for large factories or where there are special difficulties, as in buildings below ground; air is drawn in by a fan, and passed through a heating battery to ducts leading to outlets distributed throughout the factory, normally discharging a little above head level; the ducts may be below the floor or may be sheet metal slung below the roof. Where heating and ventilating are not combined in this way, the most usual form of heating is by unit heaters which may be warmed by hot water, steam or electricity; they are fixed at a height of about 9 ft., with fans to direct the warmed air as required.

In factories for light industries, radiators or panels in floors or ceilings may be used; these methods can be very satisfactory, but are likely to be more expensive than unit heaters.

ARTIFICIAL LIGHTING: Artificial lighting is governed by Statutory Order, 1941 No. 94, which calls for a general illumination of not less than six foot-candles 3 ft. above the floor over those parts of the factory where persons are regularly employed; provision is made for exceptions and special conditions. This figure should be taken as a minimum, and higher intensities are usually very desirable; conditions naturally vary greatly according to the processes carried on, and figures recommended by the Illuminating Engineering Society range from two to four foot-candles where only casual observation is required, up to 25 to 50, or even more, for fine precision work.

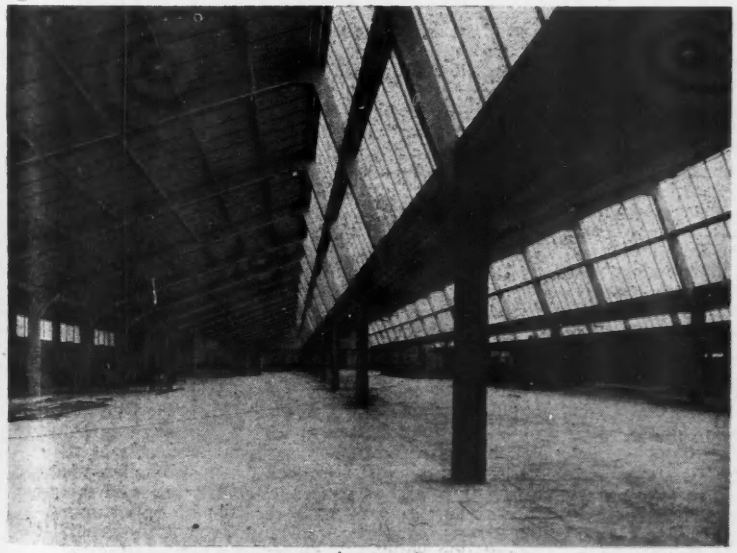
NATURAL LIGHTING: Natural lighting should also be carefully considered, especially where fine work is to be done, but its calculation is complicated by variations in the light from the sky at different times. The calculation of daylight factors is described in Post War Building Studies No. 12; the process is particularly simple in the usual case of continuous roof lighting in factories, and is of great value in establishing the best position for glazing. The Building Research Station suggests that five per cent. daylight factor is a suitable minimum for most industrial purposes and that this should be increased to 10 per cent. where fairly fine work is done.

COLOURS: The question of lighting is related to the colours used inside the building; well-chosen colours can help by giving good reflection of light and can reduce violent contrasts of light and shade; they can also brighten the building and give an impression of lightness and cleanliness which can have an important psychological effect. The colours used on machines should also be carefully chosen to give differentiation without too violent contrasts, thus increasing efficiency and safety. The British Colour Council has investigated these questions of colour in factories, and has published its recommendations.

SANITARY ACCOMMODATION: Sanitary accommodation to be provided is laid down in Statutory Rules 1938 No. 611, on the basis of one w.c. for every 25 women; one w.c. is required for every 25 men up to 100 after which the figure is 1 for every 40 men if sufficient urinal accommodation is also provided. The lavatories must be suitably ventilated, and must not communicate with any workroom except through the open air or through an intervening ventilated space.

Cloakrooms, washing facilities and drinking water are required under the Factories Act; no detailed requirements are laid down but these subjects are fully treated in Welfare Pamphlet No. 8 of the Ministry of Labour and National Service. Sanitary accommodation should be grouped with the cloakrooms and washing facilities, but with a partition between; in large factories it is necessary to provide additional sanitary accommodation, distributed so as to be within convenient distance of any part of the buildings.

Various types of cloakroom accommodation may be considered; one good method is to use steel lockers (approximately 1 ft. square by 6 ft. high) which can be connected to extract ducting at the top so that warm air from the room is drawn through the lockers, thus airing the clothes. Numbers of wash basins are not specified but, as a general guide, one basin for 15 to 20 persons is suitable for normal light industries, while one to five may be needed for heavy, dirty work, and in some cases shower baths as well. Soap can be provided as a liquid from a tank with pipes leading to points over each of a number of basins.



FACTORY IN KENT. Interior view showing unobstructed natural lighting. Joseph Emberton, F.R.I.B.A., Architect.

Amenities.

Factories now require many amenities outside the buildings directly connected with production. Facilities for medical attention, for instance, are often expanded far beyond the minimum requirements of the Factories Act so as to provide a positive health service, with sunray treatment, etc.

These requirements, which are described in Welfare Pamphlet No. 4, should certainly be treated as a minimum; they normally call for only first-aid boxes ex-

cept in special industries where ambulance rooms are essential. In practice, a first-aid room is desirable in all but the smallest works; it should be large enough to contain a surgeon's basin and couch as well as chairs, table, shelving and cupboards. A desk for the nurse's clerical work is better placed in a separate room; lavatory accommodation must be conveniently accessible and a waiting space should also be provided. Where women are employed, a separate rest room is required, and in large factories it may be desirable to separate the first-aid rooms for the two sexes. The first-aid room should be easily accessible from the works but, at the same time, reasonably quiet; it should be conveniently placed for transferring stretcher cases to a motor ambulance.

CANTEENS:—In 1943 Statutory Order No. 537 was passed, under which all factories employing more than 250 persons may be required to provide a suitable canteen where hot meals can be purchased. Advice on the planning of canteens and kitchens can be obtained from the Ministry of Labour and National Service Factory Department and from the Industrial Welfare Society, whose book "Canteens in Industry" is a useful guide. It is not possible to go into detailed planning here, but the important point to consider is that the canteen should not be designed merely as the bare minimum of space necessary for eating a hurried meal. The numbers of workers who will use the canteen will vary, so a figure must be estimated for each particular case and space allowed accordingly. The canteen itself should have an area of 8 to 10 sq. ft. per person, which will allow seats at tables for 6 or 8 persons—a much better standard than the old system of long tables with benches for 12 a side which allowed the canteen area to be reduced to about 6 sq. ft. per person.

The canteen should be made suitable for use also for dances, concerts and film shows, and in large factories it may be possible to design it as part of a recreation unit including a games room and reading room. The building should be bright, clean and colourful, and should be made as interesting and varied as possible with the possible use of decorations such as mural paintings. Adjoining ground should be treated as a well-planned garden, and in some cases there may be space for some open air games.

Lastly, transport of workers to and from the site must be considered, both for efficiency and for the comfort and convenience of employees. Car-parking space is necessary as well as cycle shelters, and provision may have to be made for special bus services.

Many of the points mentioned above may seem far removed from the essentials of the working processes of the factory, but where such matters are given consideration in preparing plans and where factory owners co-operate, the whole atmosphere can be made strikingly different from the gloom and squalor which are usually associated with the old congested industrial buildings.

Legislation can insist on essential minimum requirements, but beyond these there are an infinite number of questions which cannot be covered by regulation but which will largely determine how far the building will finally succeed in all its aspects.

OFFICIAL PUBLICATIONS

There follows a list of some official publications concerning factories, all obtainable from H.M.S.O.:

Factories Act, 1937.

Factories Act, 1948 (amendments to 1937 Act).

Statutory Rules and Orders:

1938 No. 611: Sanitary Accommodation.

1941 No. 94: Standards of Lighting.

1943 No. 573: Canteens.

Ministry of Labour and National Service Welfare Pamphlets:—

No. 4: First-Aid Services.

No. 5: Ventilation.

No. 8: Cloakrooms, lavatories, etc.

Post War Building Studies No. 16: Business Buildings.

Planning Consultants for Slough.

BUCKINGHAMSHIRE County Council have appointed Messrs. Minoprio, Spencely and Macfarlane as planning consultants for the redevelopment of the Borough of Slough.

COMING EVENTS

Monday, January 17.

THE HOUSING CENTRE.—"Housing in the Stone Districts." Exhibition and one-day conference. Speakers: Mr. R. Fitzmaurice, B.Sc., M.I.C.S. and Mr. Aneurin Bevan. 13, Suffolk-street, S.W.1. 10.30 a.m.

Tuesday, January 18.

ROYAL INSTITUTION OF CHARTERED SURVEYORS.—Agricultural Conference. "Practice Points in Connection with Part 2 and Section 31 of the Agriculture Act, 1947," by Mr. W. S. Scammell, LL.B., and "Tenant-Right Valuations under Part 3 of the Agriculture Act, 1947," by Mr. F. W. Allam, F.R.I.C.S. 12, Great George-street, S.W.1. 11.15 a.m.

UNIVERSITY COLLEGE, LONDON.—"Art and Architecture in Science." Miss Kathleen Lonsdale, D.Sc., F.R.S. Anatomy Theatre, Gower-street, W.C.1. 1.15 p.m.

Wednesday, January 19.

TOWN AND COUNTRY PLANNING ASSOCIATION.—Tottenham B.C.'s "New Town" Exhibition. The Planning Centre, 28, King-street, W.C.2. 10 a.m. to 5 p.m. (continuing until Jan. 26).

THE INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS.—"Reduction of Time Factor with New Factory Construction," by Mr. C. H. Taylor, F.I.A.S. Caxton Hall, Westminster, S.W.1. 6.30 p.m.

THE REINFORCED CONCRETE ASSOCIATION.—"The Repair of Concrete Structures," by Mr. S. Champion, M.Sc., A.M.I.C.E. The Institution of Structural Engineers, 11, Upper Belgrave-street, S.W.1. 6 p.m.

ROYAL SOCIETY OF ARTS.—"The Industrial Designer and Consumer Goods," by Mr. Milner Gray, R.D.I. John Adam-street, Adelphi, W.C.2. 2.30 p.m.

Thursday, January 20.

THE INSTITUTE OF WELDING.—Presidential address. Polytechnic, Regent-street, W.1. 7.30 p.m.

SOCIETY OF CHEMICAL INDUSTRY.—"Cold Bituminous Construction," by Mr. L. G. Gabriel. Gas Industry House, 1, Grosvenor-place, S.W.1. 6 p.m.

Friday, January 21.

THE SOCIETY OF ENGINEERS.—Speaker, Mr. J. C. Allen, A.M.S.E. 17, Victoria-street, S.W.1. 6.30 p.m.

Saturday, January 22.

BIRMINGHAM AND FIVE COUNTIES ARCHITECTURAL ASSOCIATION.—One-day school of 1947 Town and Country Planning Act. Digbeth Institute, Birmingham. 10.30 a.m.

THE OUTLOOK FOR 1949

(*Concluded from page* 38.)

clined of the industry's spokesmen were freely prophesying the reduction of work to a trickle and the wholesale diversion of labour to other industries.

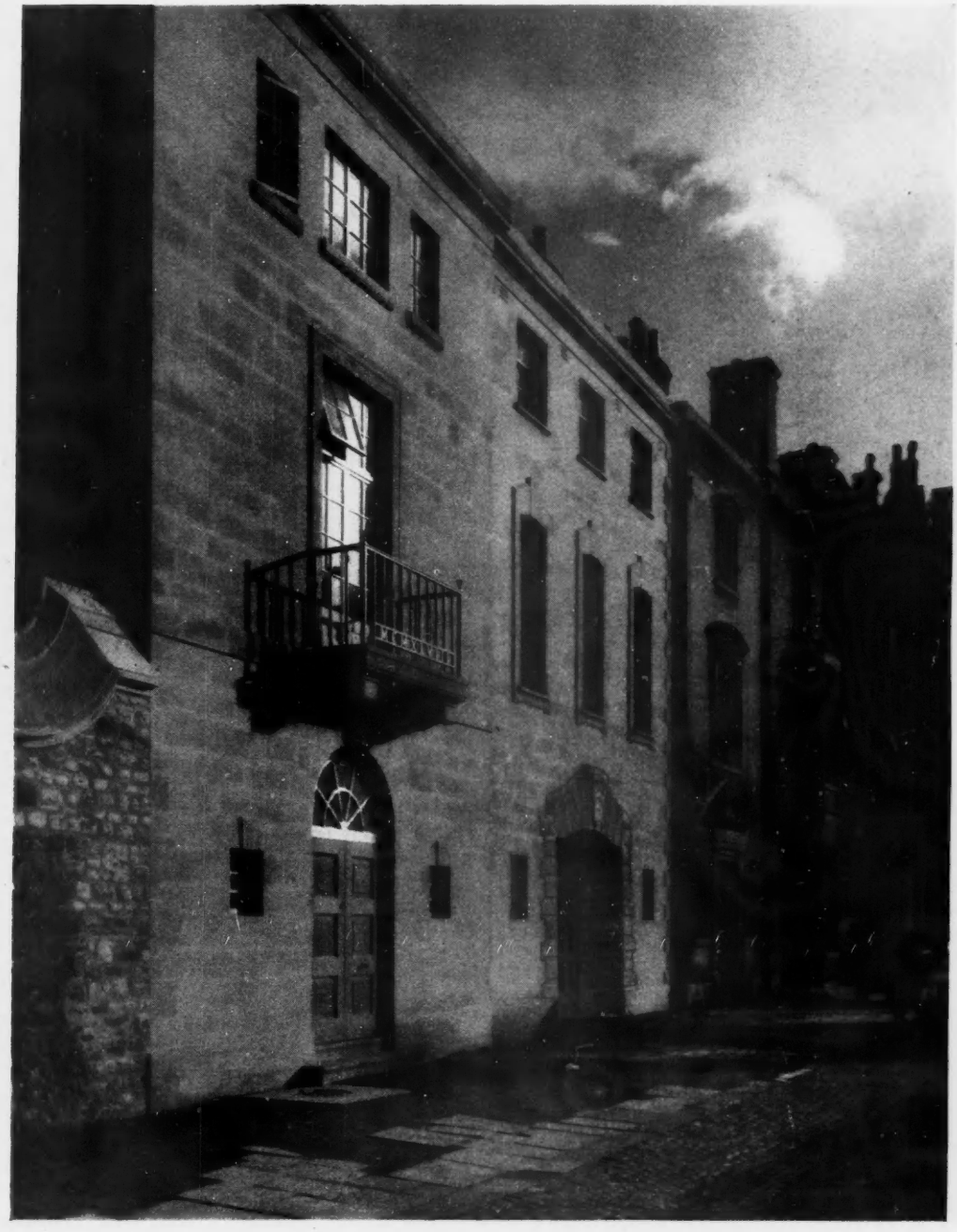
In fact, none of this has happened. More houses have been completed this year than in the preceding year, though it will be remembered that it was the unduly large backlog carried by the industry that made this possible. However, new orders are again being placed to an amount that insures work for some time to come, and, what is still more satisfactory, the immediate post-war preoccupation with houses and housing alone is yielding to a more common-sense appreciation of the importance of other kinds of building, in particular industrial construction.

Apart from the contribution this wider range of activity can make towards the nation's recovery, it has a direct bearing on the future of the industry. Anxiety has been publicly expressed with regard to the recruitment of the apprentices necessary to keep the labour force up to strength. One of the greatest deterrents which up to now had led employers not to take on as many apprentices as they were urged was their realisation that they could not, on the work then being placed with them, provide an apprentice with the thorough practical experience and training which he had a right to expect. This fear should now be partially removed and there is hope that recruits to the industry will be able to receive the practical training necessary to develop the standard of skill required of their craftsmen by the specialist industries.

During the year the production of materials has so improved that it has been possible for the Ministry of Works to give proof of its professed willingness to make a start on removing controls as soon as might be. The abolition of the W.B.A. scheme and the raising of the licensing "free" limit are both events which it is fair to hope will be the precursors of similar advances in 1949.

The most serious fact revealed by the year's work has been the increase in building costs. The builder has been acquitted by two committees of any inflation of his profits. Part of the increase we know to be due to the improved amenities of the houses now being constructed. There remains, however, an alarming balance which can be reduced only by increased productivity in the building as in other industries. This is the field in which must lie our endeavours for the coming year, during which I wish for the prosperity and success of all sections of the industry as well as, in particular, member associations of this Federation. A message at this time of year also seems to me the best of opportunities to express my support for that movement for general co-operation within the industry to which, during the past year, so wise a lead has been given in certain quarters, and this I do wholeheartedly.

W. COWEN.



General view of the two buildings from St. Giles. The Gate House is to the right.

Collegiate Buildings, Oxford

GATE HOUSE FOR TRINITY COLLEGE:
Hubert Worthington (Kt.), A.R.A., Architect.

UNDERGRADUATE BLOCK FOR ST. JOHN'S COLLEGE:
Edward Maufe, R.A., Architect.

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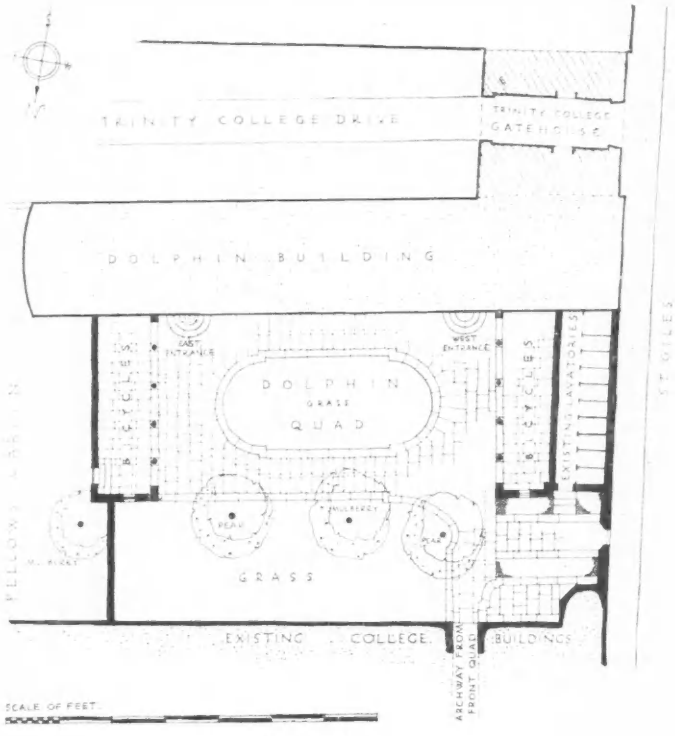
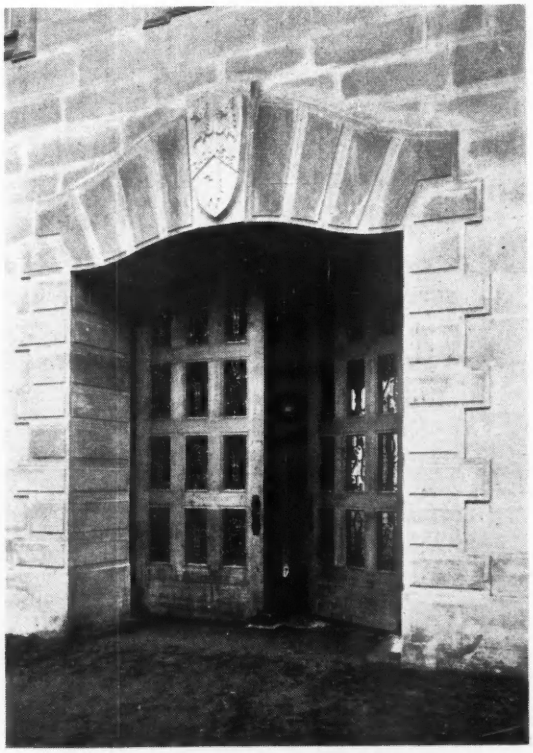
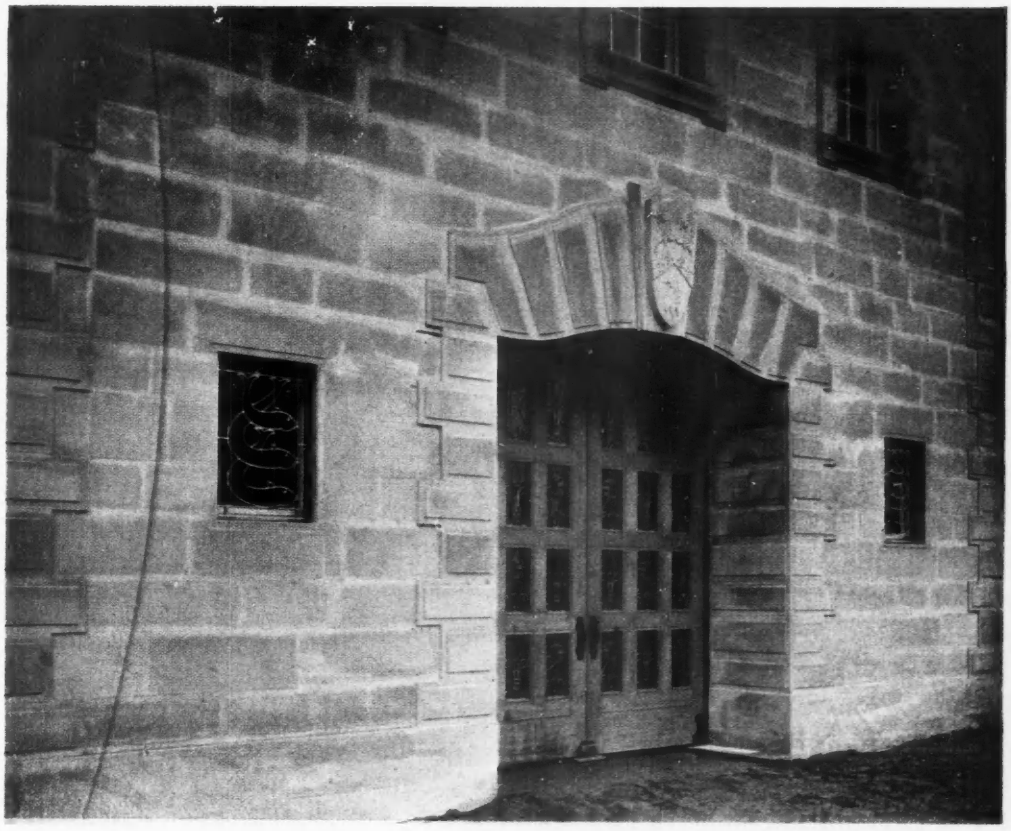


The layout.

THE Oxford buildings which we now illustrate—a Gate House for Trinity College and an Undergraduate Block (Dolphin Quadrangle) for St. John's College—are the result of a most happy collaboration between the two Colleges and their architects, Mr. Hubert Worthington, A.R.A., for Trinity, and Mr. Edward Maufe, R.A., for St. John's. Both architects have used Clipsham ashlar with roofs of stone slates and, it may be thought, have most successfully "married" the St. Giles elevations while giving each building an individual character which is distinctive. The enlightened policy adopted by the two Colleges has worked to the advantage of each in the matter of boundaries, lighting and joining-up with existing buildings. This policy has resulted in the unusual harmony referred to between the two structures, and a nice sense of scale being obtained with the neighbouring buildings, the main cornice being determined by that of the existing houses which adjoin and front on to St. Giles. The work gained much from being carried out simultaneously by the same builders, Messrs. Benfield and Loxley, Ltd., under one general foreman, Mr. K. L. Bishop.



Detail of the Trinity Gateway. The gates are of English oak, with open panels filled with wrought-iron grilles, gilded.



THE TRINITY GATE HOUSE.

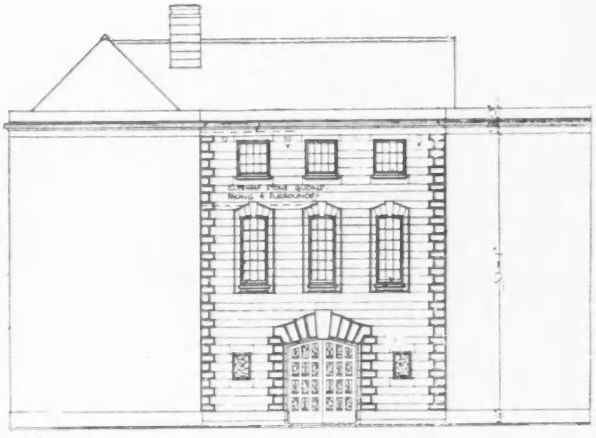
The Trinity Gate House.

The Trinity Gate House forms a subsidiary entrance to Trinity College from St. Giles, and provides a convenient home for a married Fellow.

The frontage is only 22 ft. wide, with a central archway crowned by a keystone with the College Arms, whilst above are three tall windows on the first floor, with three smaller ones over The windows on each side of the archway have three fishes in gilded wrought iron, the emblem of the Trinity.

The gates are of English oak, with open panels, filled with wrought iron grilles, gilded, with griffins and *Fleurs-de-Lys* that come in the College Arms.

The combined scheme shuts out from a main Oxford thoroughfare what was a most unsightly view of back premises, and in its place provides an amenity to St. Giles that is an important addition to Oxford architecture and, at the same time, provides much-needed accommodation for undergraduates and Fellows in an overcrowded University.



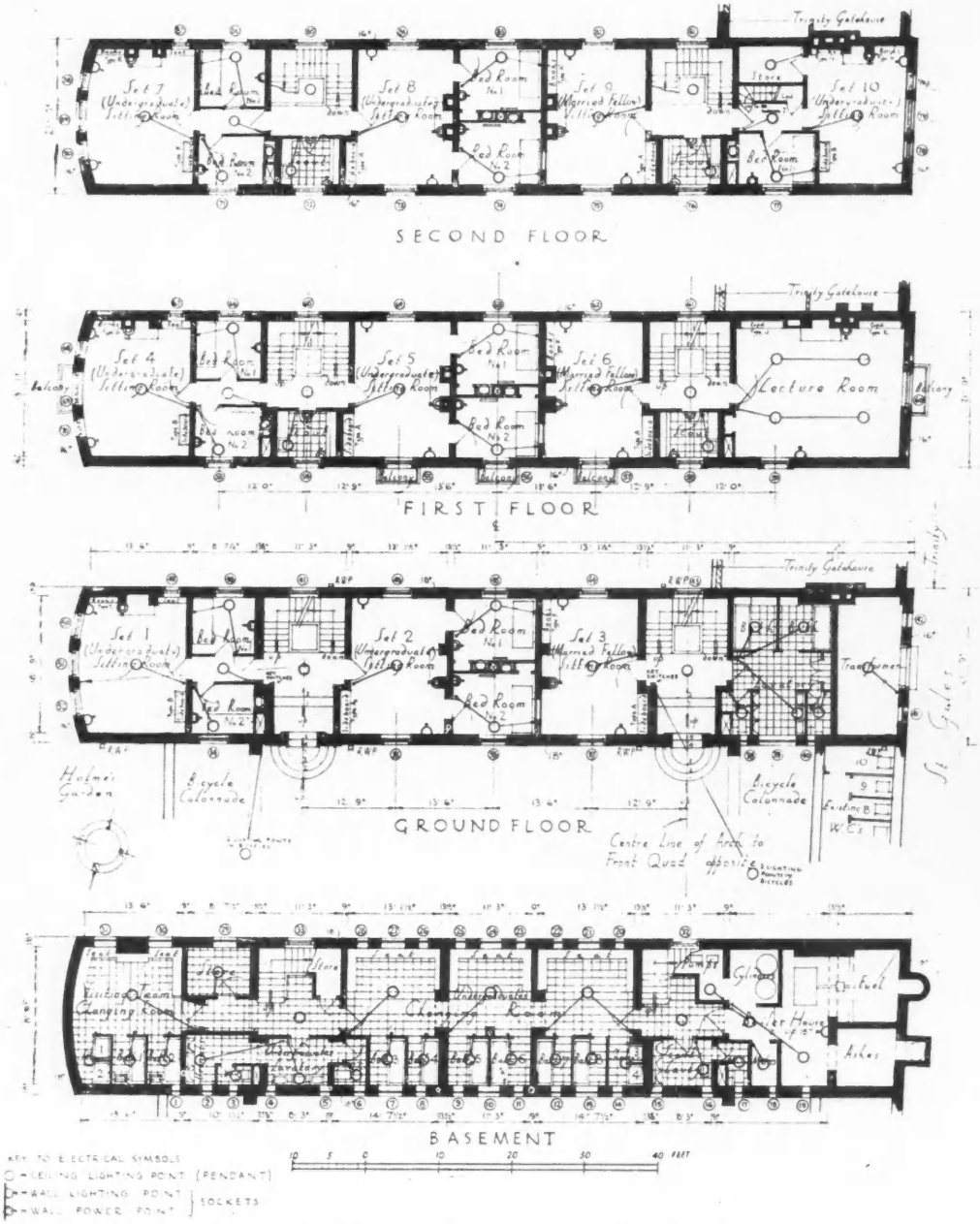
Dolphin Quadrangle.

THE St. John building, called Dolphin Quadrangle from the name of an inn originally on the site, consists primarily of undergraduates' and Fellows' sets of rooms, a lecture room, changing rooms, baths, etc., and lavatories. The arched opening on the St. Giles front leads to an electrical transformer station of the City Corporation.

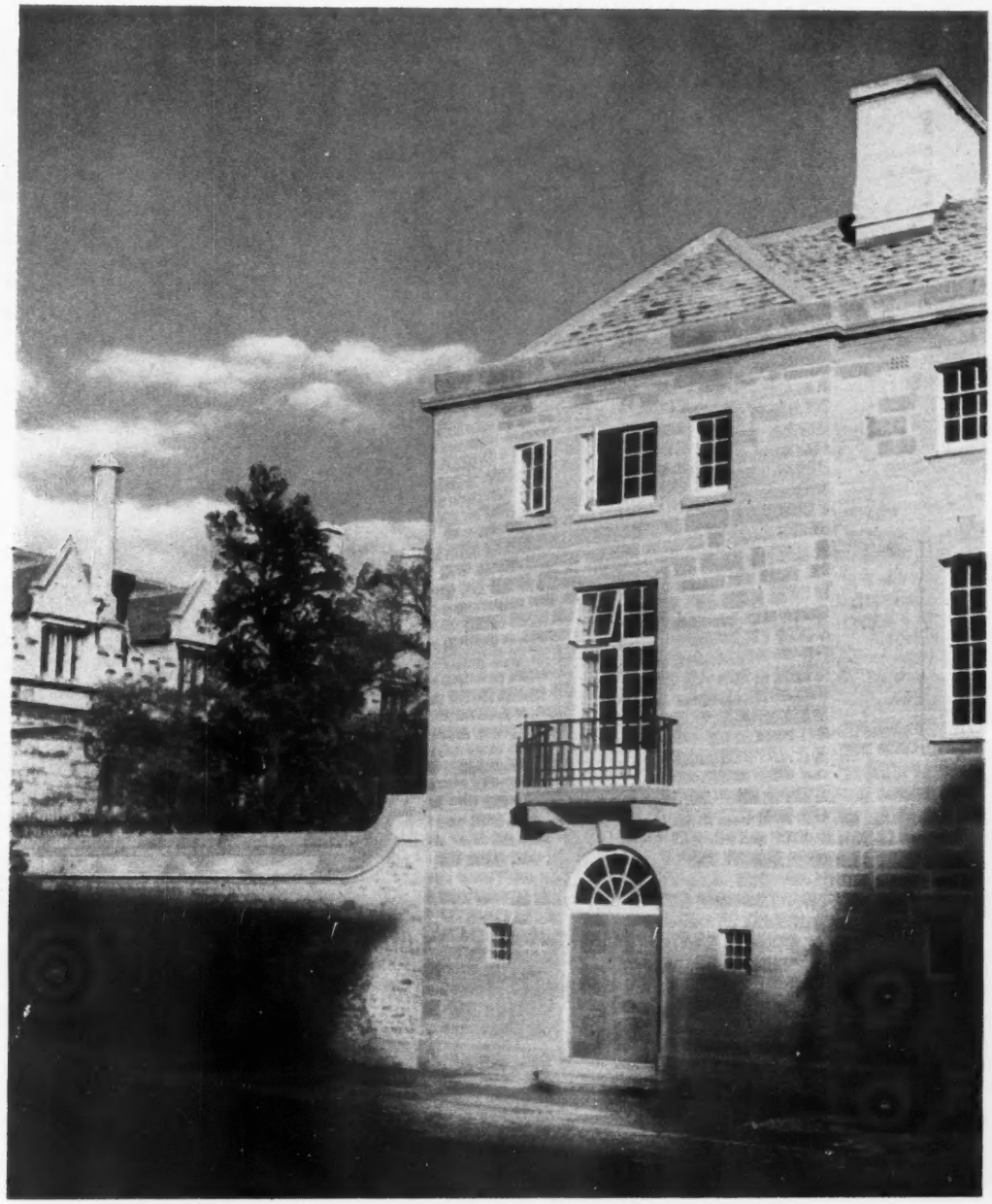
The planning of this building, with its bicycle colonnades on the east and west sides, has allowed for the formation of a small but charming new Quad in St. John's College, with the pear trees and mulberries retained along one side of it. The western colonnade discreetly hides the useful but long Victorian block of undergraduate lavatories retained throughout the work.

The buildings are of fire-resisting construction with reinforced concrete floors and roof. The rainwater heads and down pipes are of lead. The staircases are of English oak in the best College tradition. The new quadrangle is laid out very simply with York paving and a shaped grass plot at the centre.

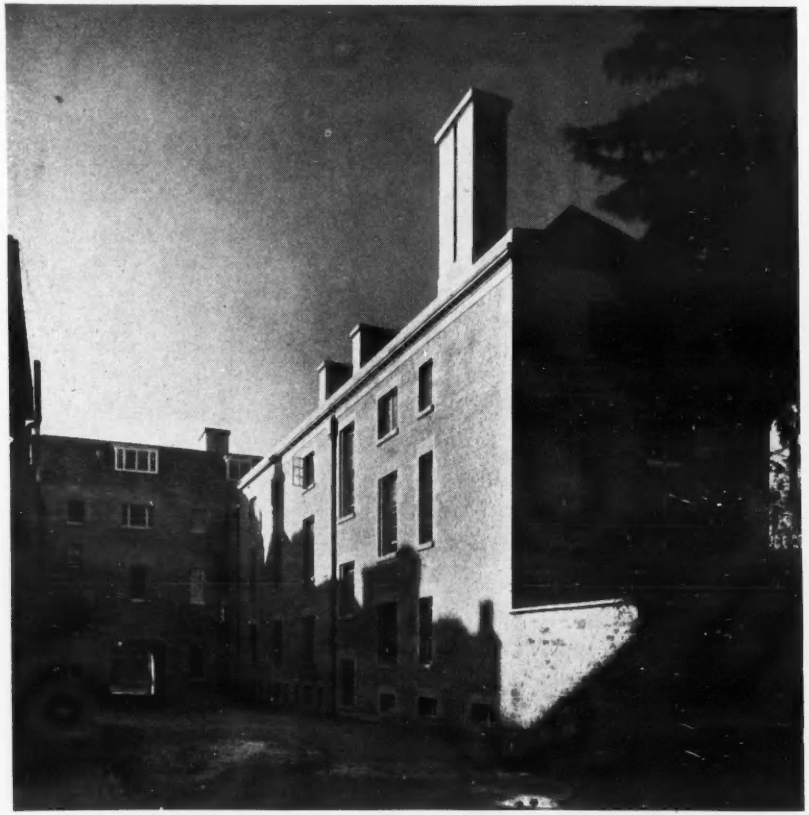
The wrought-iron balconies have the Lamb and Flag of St. John the Baptist. The keystones over the staircase entrances are carved with dolphins; the keystone to the archway to St. Giles again has the College badge.



DOLPHIN QUADRANGLE, ST. JOHN'S COLLEGE: The plans.



View from St. Giles.
DOLPHIN QUADRANGLE, ST. JOHN'S COLLEGE



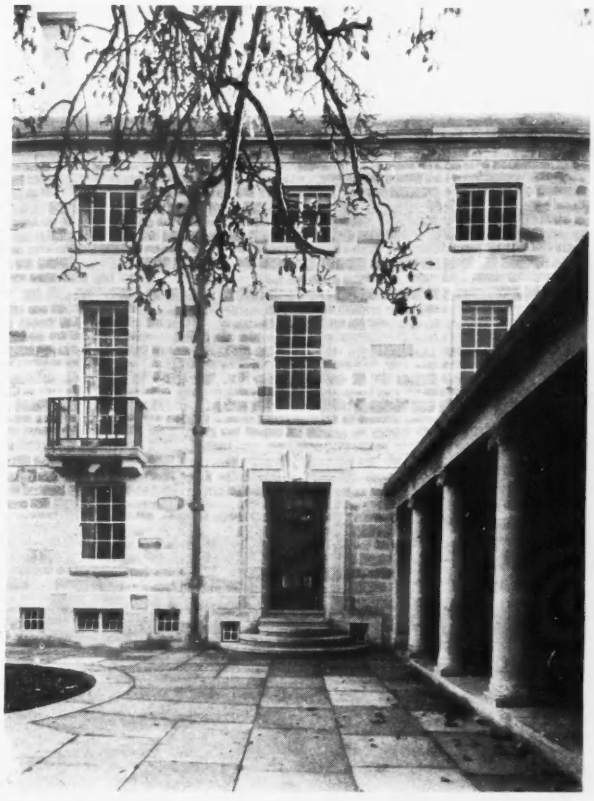
East front, Trinity Gate House, and South front, Dolphin Quadrangle, St. John's.

Dolphin Quadrangle, St. John's College: East front to Fellows' Garden.

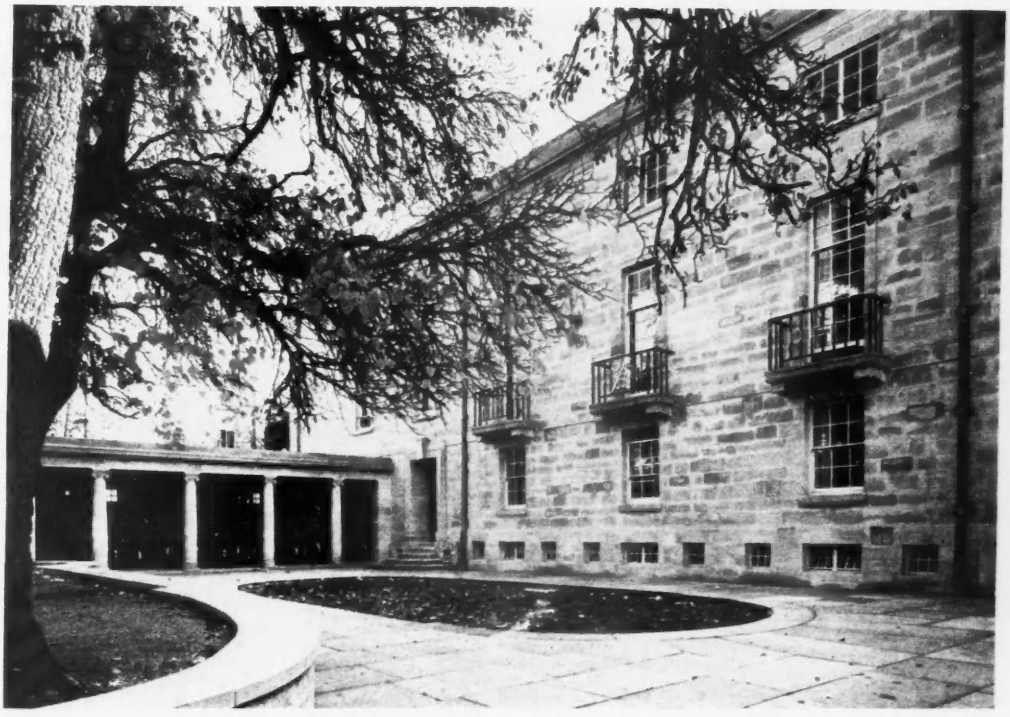
COLLEGIATE BUILDINGS, OXFORD

The general contractors for both Gate House and Dolphin Quadrangle were Messrs. Benfield and Loxley (Oxford) Ltd., of Oxford. Sub-contractors for the TRINITY COLLEGE GATE HOUSE were:—Fireproof floors, Kleine Co., Ltd., London; asphalt work, Limmer and Trinidad Lake Asphalt Co., Ltd., London; electric lift, etc., Watson and Son, Oxford; domestic hot water and internal plumbing, Fred G. Alden, Ltd., Oxford; constructional steelwork, Redpath, Brown and Co., Ltd., London; decorative grilles in wrought iron, the Birmingham Guild, Ltd., Birmingham; wood block floors, Horsley Smith and Co. (Hayes), Ltd., Hayes, Middx; "Granwood" floor, Granwood Flooring Co., Ltd., Derbyshire; Colleyweston roof slating, Chas. Arnold (Isleworth) Ltd., Isleworth; flush doors, Wm. Mallinson and Sons, Ltd., London; oak gates, L. Brown and Sons, Wilmslow; marble fireplace, J. and H. Patteson Ltd., Manchester; and carving, Tegetmeier and Cribb.

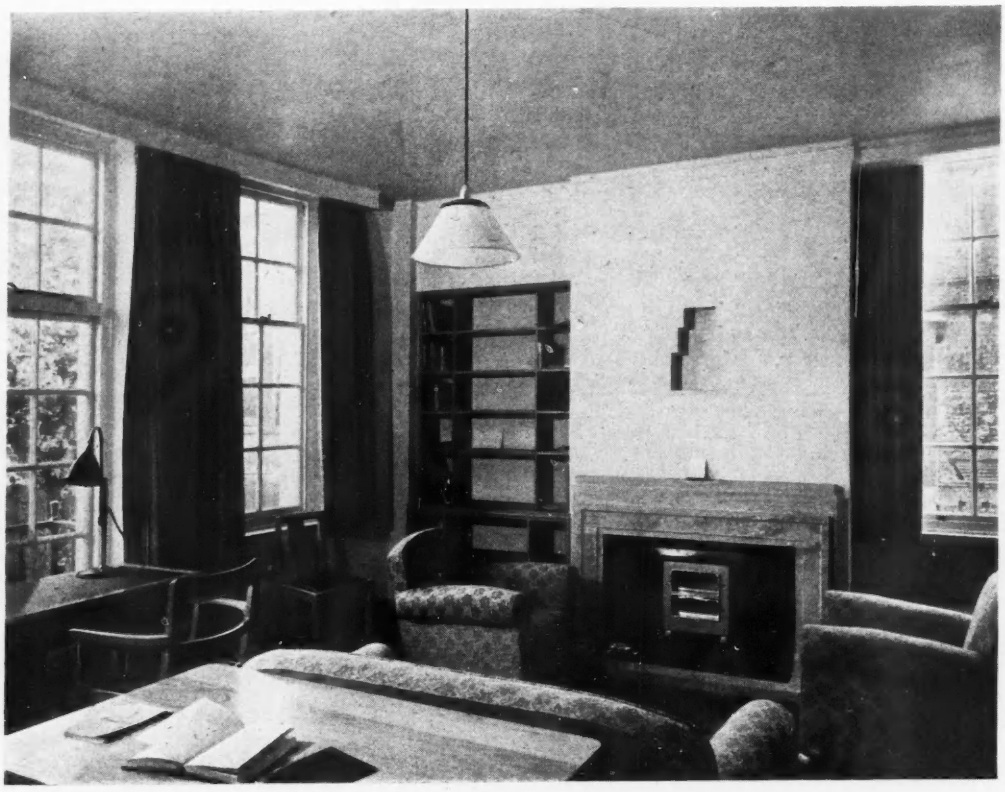
For DOLPHIN QUADRANGLE, ST. JOHN'S COLLEGE, sub-contractors were:—Fireproof floors, Kleine Co., Ltd., London; asphalt work, Limmer and Trinidad Lake Asphalt Co., Ltd., London; internal and external plumbing and lead head and r.w. pipes, F. Church, Oxford; electric light etc., Lowe and Oliver, Ltd., Oxford; domestic hot water, etc., Fred. G. Alden, Ltd., Oxford; sanitary fittings, John Bolding and Sons, Ltd., London; wood block

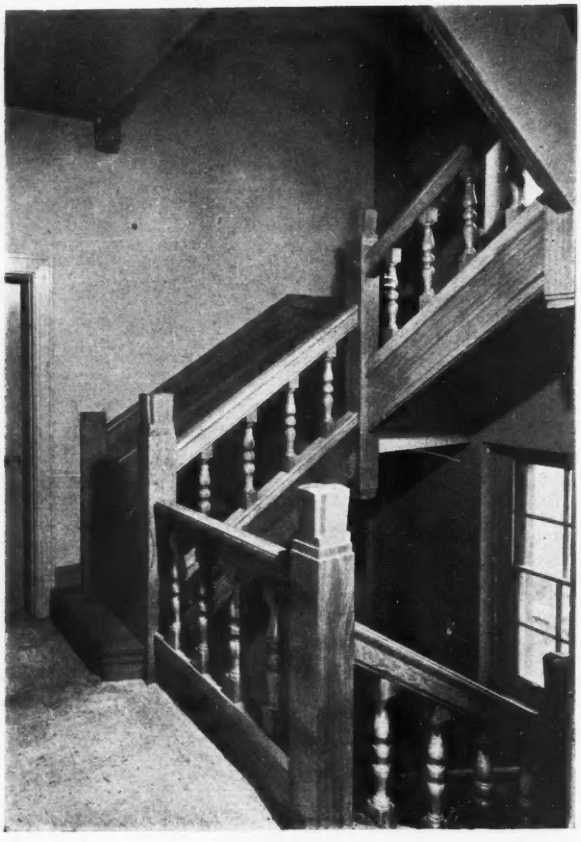


DOLPHIN QUADRANGLE: West staircase entrance.



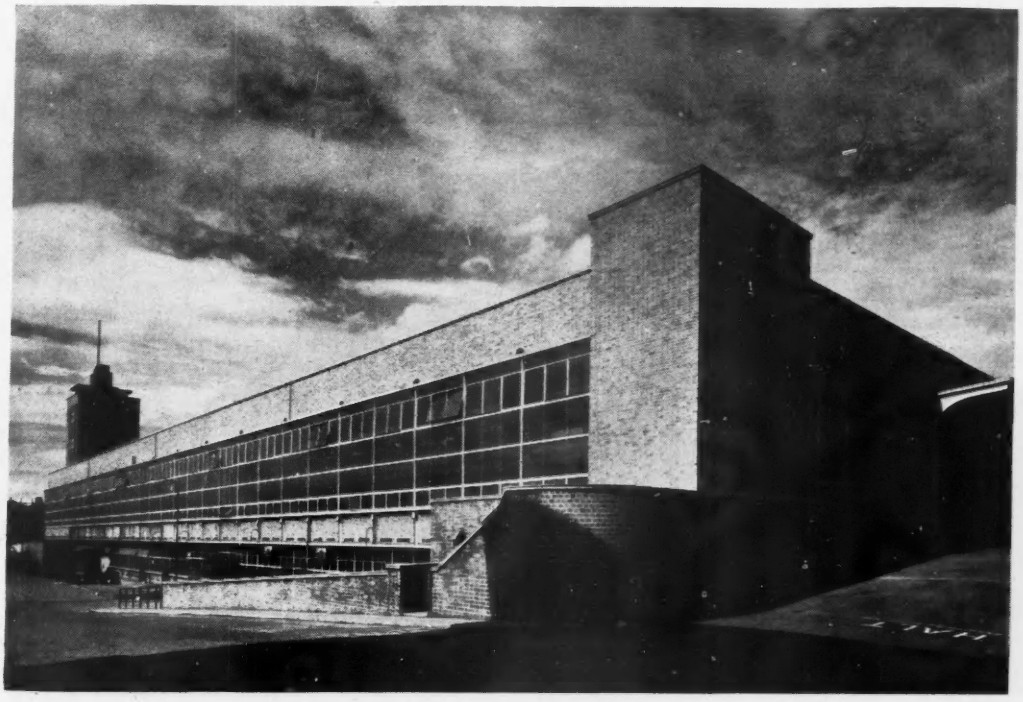
DOLPHIN QUADRANGLE, ST. JOHN'S COLLEGE. View from North-West.





DOLPHIN QUADRANGLE, ST. JOHN'S COLLEGE. Undergraduates' sitting room (*above*). **The West staircase** (*left*).

floors, Hollis Bros. and Co., Ltd., London; " Biancola " floor and wall finishes, Art Pavements and Decorations, Ltd., London; constructional steelwork, Redpath, Brown and Co., Ltd., London; sound-proofing to floors, Horace W. Cullum and Co., Ltd., London; rubber floors, Leyland and Birmingham Rubber Co., Ltd., London; wrought-iron balcony, balustrades, etc., Wm. Pickford Ltd., London; flush doors, Wm. Mallinson and Sons, Ltd., London; Colleyweston roof slating, Chas. Arnold (Isleworth) Ltd., Isleworth; internal hardwood, joinery, etc., Samuel Elliott and Sons (Reading) Ltd., Reading; ironmongery, Yannedis and Co., Ltd., London; fireplaces, Bratt Colbran Ltd., London; glazed wall tiling, Carter and Co., (London) Ltd., London; cycle stands, Lockerbie and Wilkinson (Birmingham) Ltd., Tipton, Staffs; lightning conductors, Wm. Bacon and Co., Ilford, Essex; " Paropa " flat roofing, Frazzi Ltd., London; metal casements, C. E. Welstead Ltd., Croydon; carving to colonnade caps, Messrs. T. W. Tyrell, Oxford; carving to keystones, Messrs. Tegetmeier and Cribb; and gilding to r.w. heads and colouring, also to balcony, etc., Mr. W. H. Sharpington, of London.

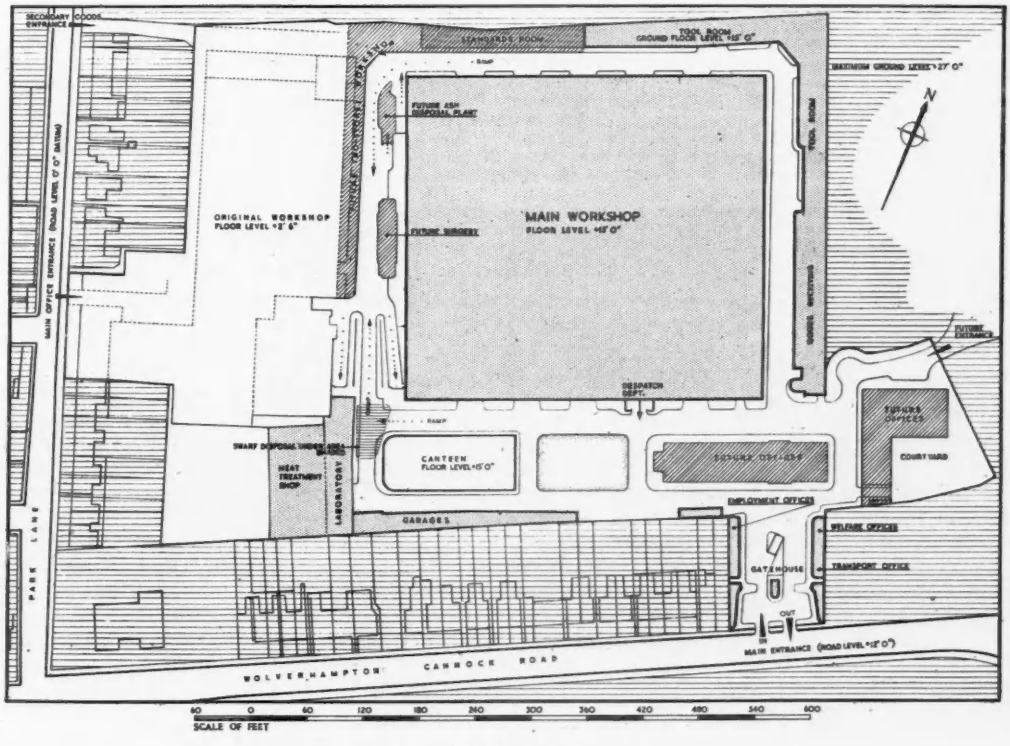


South-west elevation of main workshop.

A FACTORY AT WOLVERHAMPTON

for Henry Meadows, Ltd.

JACKSON AND EDMONDS, FF.R.I.B.A., ARCHITECTS



The layout.

M

THIS factory, on a six-acre site to the east of the existing factory, was planned in 1938 and built during the war to produce tank engines and gear-boxes. Clients' requirements were an independent machine and assembly shop, allowing for all necessary ancillary buildings as well as a main administrative block, canteen and roadways to serve both old and new factories.

The largest unit is a north-lighted workshop on a single floor. A gallery carries the production offices and light stores, and under it are the rough and finished part stores, engine testing installations and despatch. A lower ground floor at road level accommodates the main boiler house, cloak rooms and lavatories. To give the most flexible floor space a steelwork grid using 85-ft. Warren girders at 30-ft. centres was adopted in conjunction with an underfloor service duct system coinciding with the stanchion lines running north and south. These ducts are 6 ft. 6 in. high and 3 ft. wide and carry all heating mains, water supply and electrical feeder cables to plant. The floor is finished with 3-in. end grain wood blocks, chosen for durability, silence, and comfort, and offering least injury to machined parts or gauges.

The main steel of the roof was designed to carry light travelling cranes and runways. The south slopes of the main roof are covered with insulated metal decking and the gutters are cast-iron discharging on to flat roofs.

Two engine test shops are situated within this area. The first comprises seven beds for engines up to 250 h.p. and the second test plant was designed for engines up to 1,000 h.p. and comprises five units each consisting of two test cells. The main goods receiving department, stores and tool rooms are in a two-storey steel-framed building approximately 25 ft. wide. Incoming goods are received on a deck 135 ft. long covered by a cantilevered canopy carrying electric overhead cranes. Three three-ton capacity lifts are distributed to serve the floors of this building. The canteen block comprises kitchen and main works canteen, with two floors of staff dining rooms above the service portion of the kitchen. A lower ground floor accommodates the food stores, main water storage tank, and pump rooms. The main steel-framed laboratory block contains two laboratories, the lower for physics and mechanical testing and the upper for chemistry. The floor finish of the chemistry laboratory is of wood blocks and that of the physics laboratory of granolithic.

Main workshop and canteen from laboratory roof.

Beneath the road between the canteen, main workshop and laboratory is the swarf disposal section and main oil storage. It is served by an underground corridor which gives covered connection between old and new factories and heat treatment shops.

Covered garage space is provided for works' vehicles and cars. Separate garages accommodate the ambulance and fire pumps.

The heating of the factory is by low pressure hot water. Working areas generally are warmed by thermostatically controlled unit heaters. Under large areas of glass, coils or radiators are fitted to eliminate down draughts. The canteen, offices, laboratory, and certain of the stores are heated by radiators. The staff dining rooms and kitchen have heating panels. Water for production and fire fighting purposes is supplied by a borehole about 360 ft. deep.

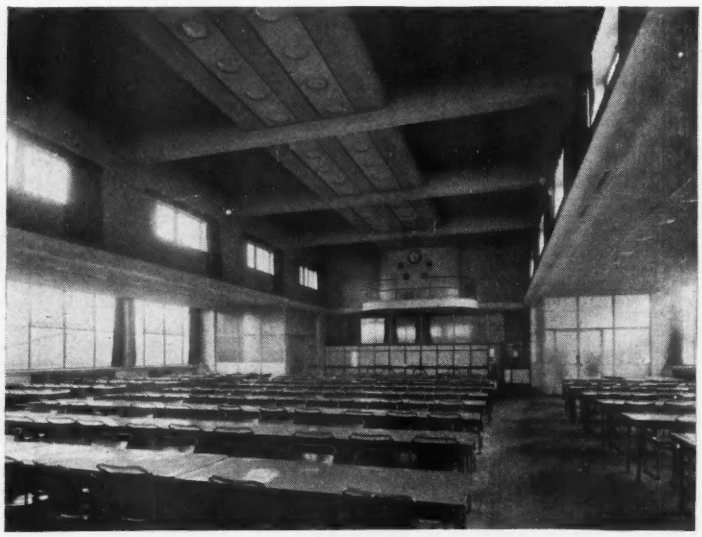
Apart from the normal difficulties of war-time building, complications were introduced by having to carry out building operations over and around plant already in production. Fortnightly meetings between clients, architects, engineer and the contractor overcame these difficulties and direct contact was maintained by means of a resident architectural staff.

Much good advice was given on needs of production areas and works welfare accommodation by the managing director, Mr. W. Wilson Hamill.

The consulting engineer for the work was Mr. S. Willis, A.M.Inst.C.E., A.M.I.Struct.E., and the senior assistants who worked on the design were: Mr. J. F. R. Gooding, A.R.I.B.A., Mr. K. A. Lloyd, A.R.I.B.A., Mr. F. Potter, F.R.I.B.A., and Mr. G. A. G. Miller, A.R.I.B.A., A.M.T.P.I., while Mr. A. W. Varcoe, A.R.I.B.A., represented the firm on the site.

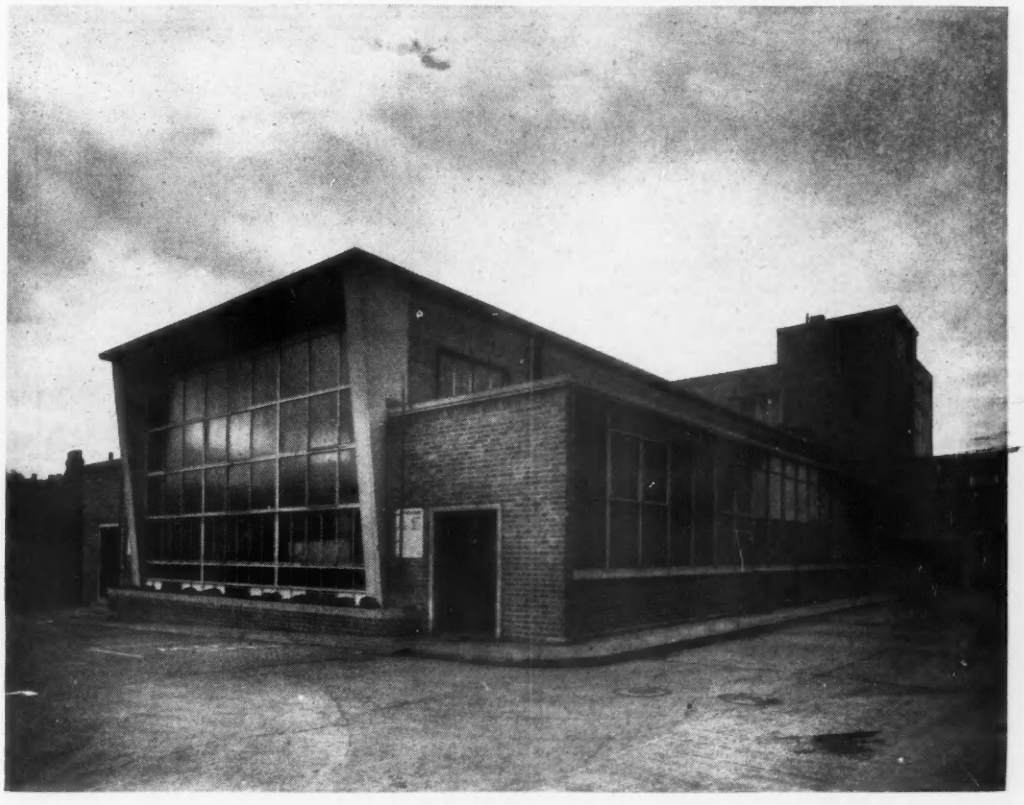
The general contractors were Messrs. McKeand Smith, Ltd.

Sub-contractors and suppliers included :—Steel work, Braithwaite & Co., Ltd., and E. C. & J. Keay, Ltd.; heating and ventilation, G. N. Haden, Ltd.; patent glazing, electrically operated obscuration shutters and pressed metal, Henry Hope & Sons, Ltd.; metal windows, John Gibbs, Ltd.; glazed bricks and partitions, Stourbridge Glazed Brick Co.; asphalt, Lea Brea Asphalte Co., Ltd.; insulated roof decking, Ruberoid, Ltd.; glass, Pilkingtons, Ltd.; reconstructed stone, Lyne & Sons, Ltd.; plumbing, D. Wiseman Bros.; special pipework for testing installations, Hopes Heating and Lighting; sanitary goods, Farrers, Ltd.; electrical installation, Atkin & Evans, Ltd.; terrazzo, Venetian Flooring Co.; wood block flooring, Acme Flooring, Ltd.; ironmongery, Waltho & Co., Ltd., and J. Gibbons; painting, Alfred Bagnall, Ltd.; shutter gates, Bolton Gate Co.; roller shutters, Mather & Platt, Ltd.; lifts, Evans Lifts and A. & P. Stevens Ltd.; special metal work, Starkie Gardner & Co., Ltd. and J. R. Pearson, Ltd.; metal flooring Hill & Smith, Ltd., and Steelway, Ltd., acoustical treatment and silencers, Burgess Products, Ltd.; machinery isolation, Christie & Grey, Ltd.; borehole, Le Grand Sutcliffe & Gell; water softening, John Thompson Kennicott, Ltd.; kitchen equipment, Aga, Ltd.; facing bricks, The Himley Brick Co.; engineering and other bricks, Alldridge & Lilleshall Brick Co. and Edwards, Ltd., Ruabon.

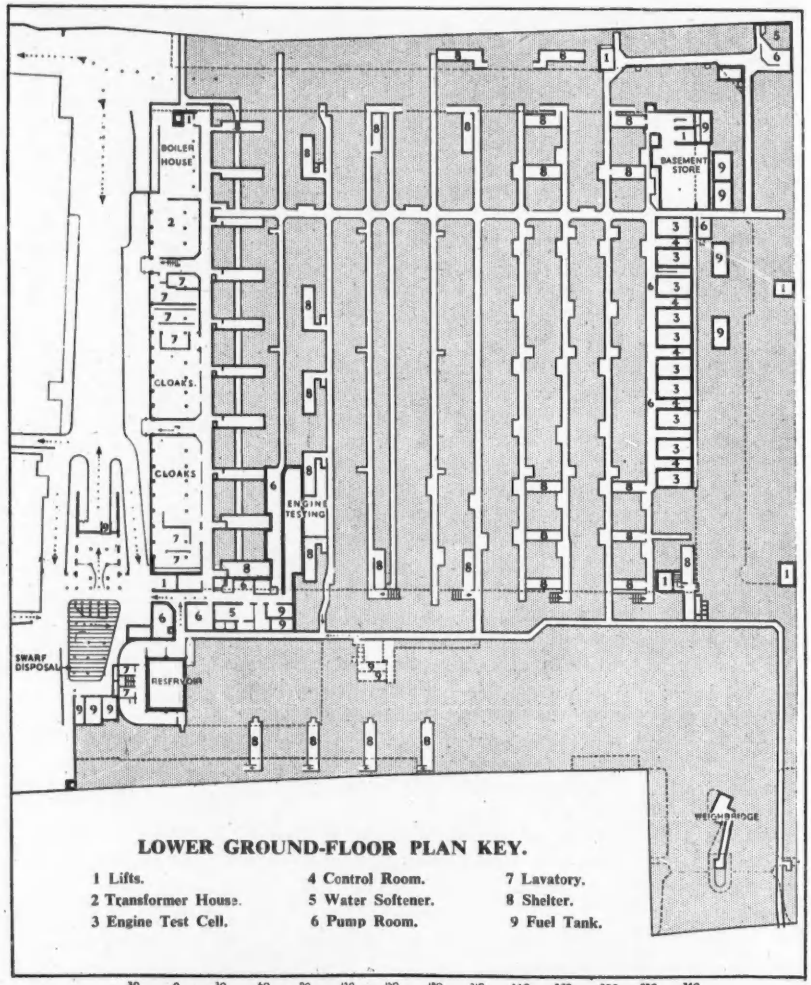


Interior of works canteen.

Canteen from the South-west.



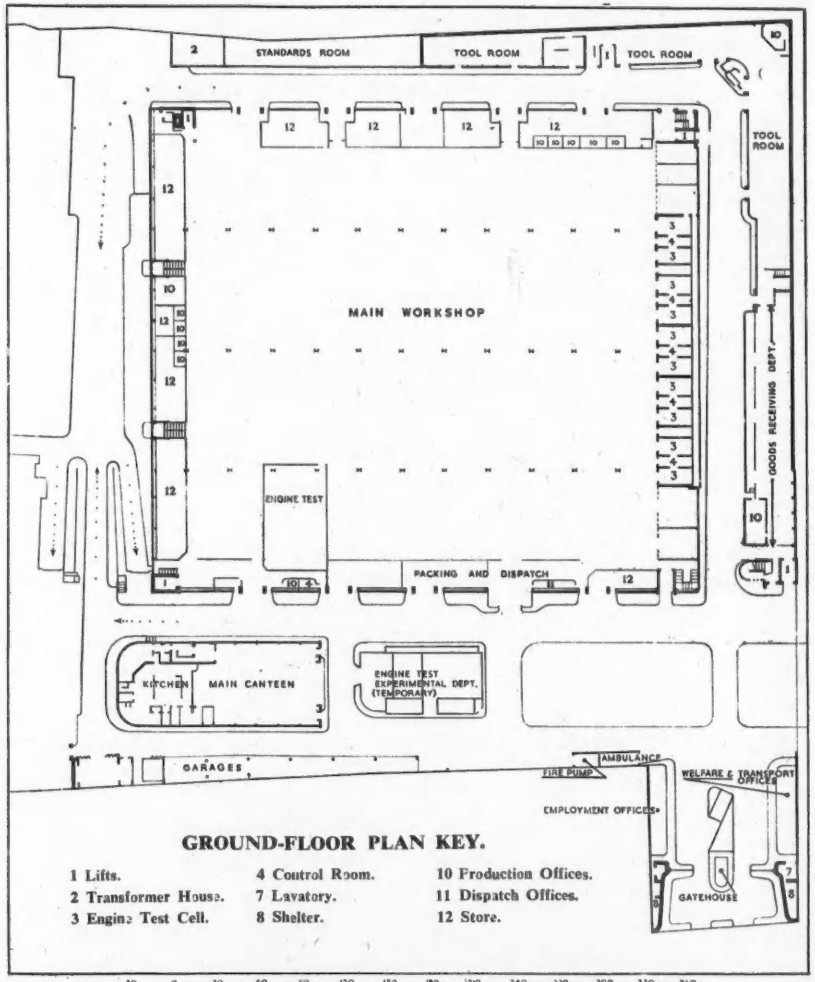
The Canteen.



LOWER GROUND-FLOOR PLAN KEY.

1 Lifts.
2 Transformer House.
3 Engine Test Cell.
4 Control Room.
5 Water Softener.
6 Pump Room.
7 Lavatory.
8 Shelter.
9 Fuel Tank.

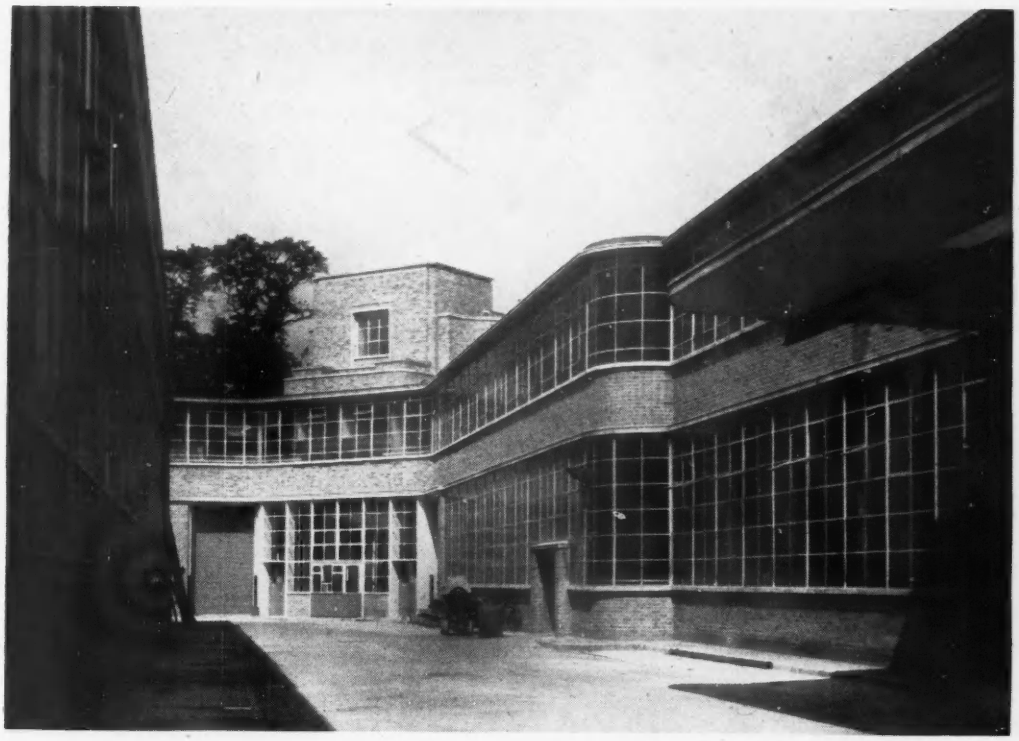
SCALE OF FEET



GROUND-FLOOR PLAN KEY.

1 Lifts.
2 Transformer House.
3 Engine Test Cell.
4 Control Room.
7 Lavatory.
8 Shelter.
10 Production Offices.
11 Dispatch Offices.
12 Store.

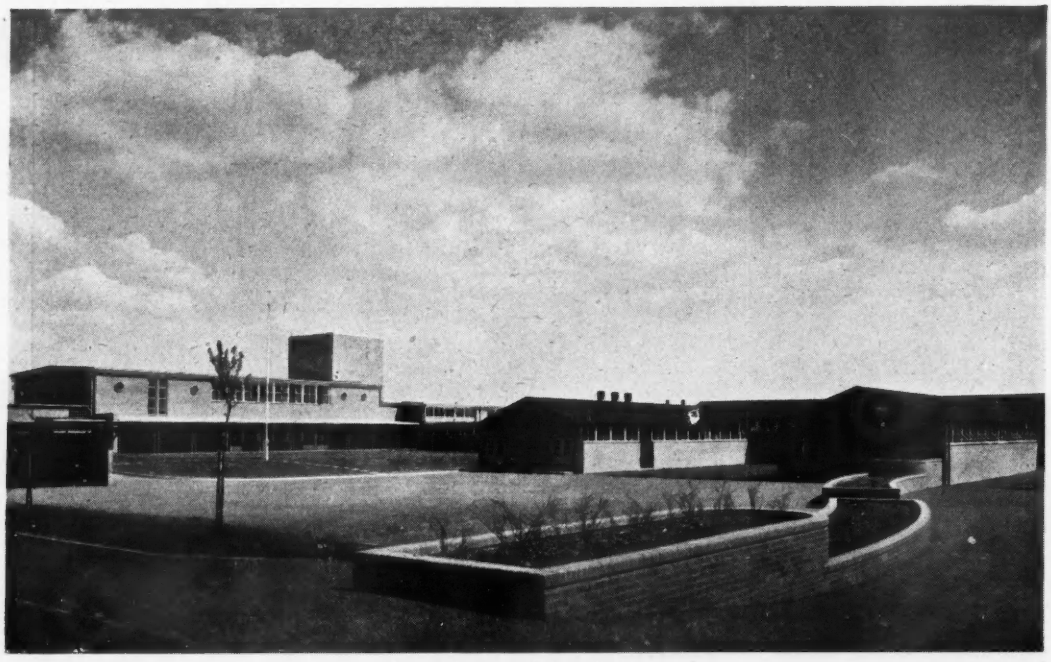
SCALE OF FEET



Tool room and storage block.

Goods receiving department.

A FACTORY AT WOLVERHAMPTON. JACKSON AND EDMONDS, FF.R.I.B.A., ARCHITECTS



General view of the school.

FIELD END SCHOOL, EASTCOTE, MIDDLESEX

HOWARD V. LOBB, F.R.I.B.A., ARCHITECT

FIELD END Primary and Infants' School has been designed by Mr. H. V. Lobb, F.R.I.B.A., on the lines of St. Audrey's School, Hatfield (illustrated and described in *The Builder*, July 26, 1946), the reconstruction of which in 1945 demonstrated that a suitable structural system can provide permanent school buildings in hardly more man-hours than is required to put up temporary hutting.

Field End School occupies a 15-acre site in the Ruislip-Northwood Urban District, and accommodates 240 junior pupils aged from seven to 11 years, and 160 infants aged from five to seven years, and is co-educational.

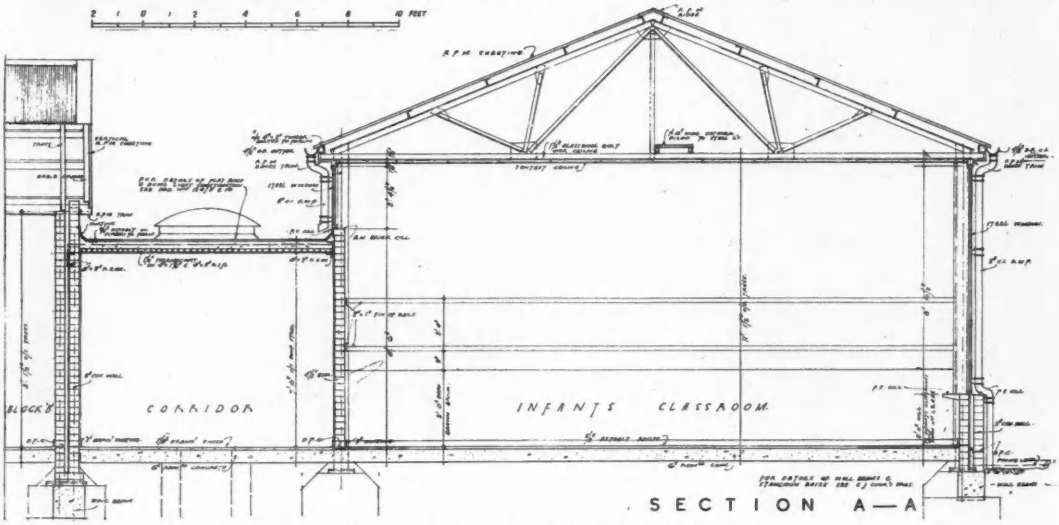
The assembly hall accommodates full numbers, but the dining hall holds a little less than half the school population at one sitting; lunch is therefore served in two shifts, but the kitchen provides the full number of meals at once.

The orientation and comparative narrowness of the site necessitated the provision of one classroom block only. The aspect is south-south-east or south-east, except for the practical rooms, which face north-east. The four infants' classrooms are partially self-contained, having their own cloakroom block for boys and girls and their own playground.

The school is constructed of light steel frame with flint-lime brick external walls and internal partitions.

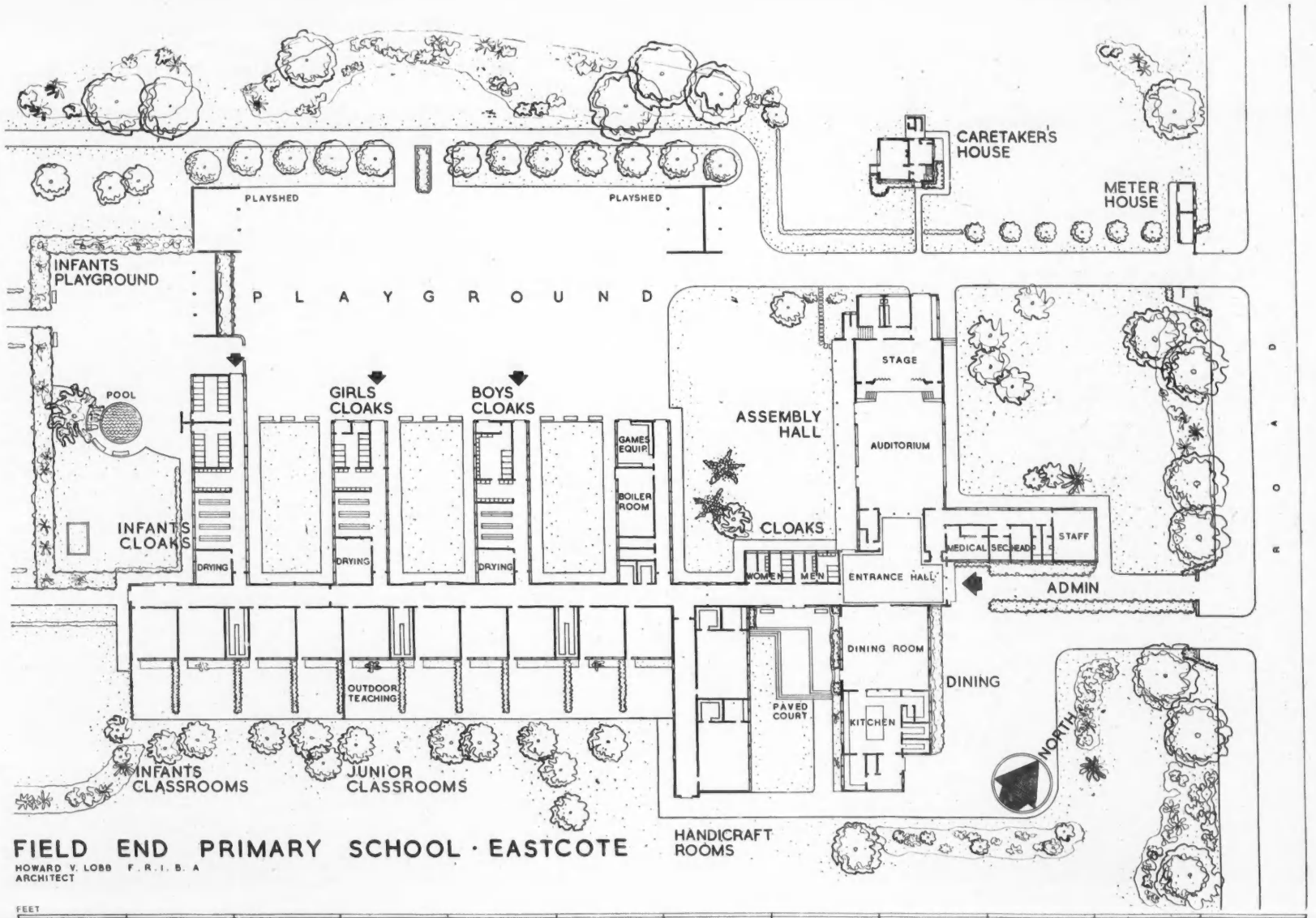
Foundations consist of concrete blocks taken down to the level of clay unaffected by shrinkage in dry periods (minimum 3 ft. below surface). The stanchions stand on these blocks, which also take the ends of reinforced concrete beams carrying the external brick walls. The floors are concrete reinforced with No. 65 B.R.C. mesh.

Classroom and cloakroom blocks have 22½ deg. pitched roofs with trusses of identical design. Ceilings are of fibreboard sheets supported at

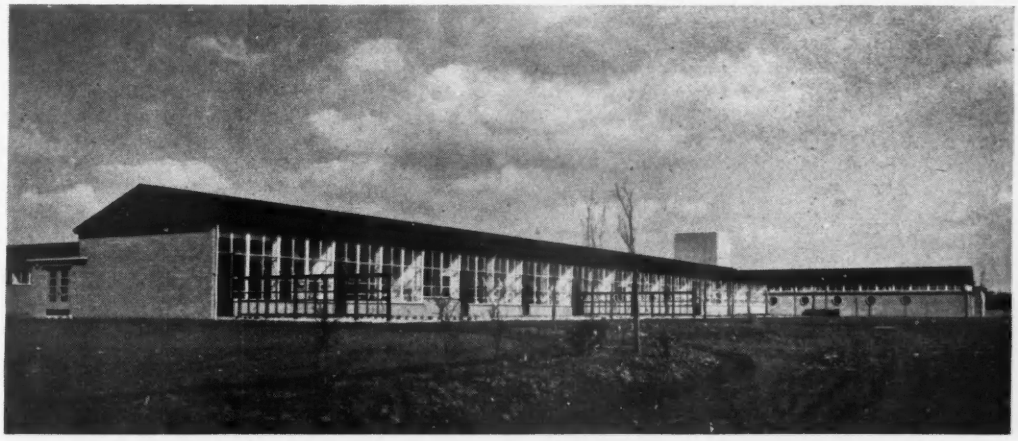


Cross-section of infants' classroom block.

FIELD END SCHOOL. The main entrance and administration block. On the left is the dining-hall and beyond the tower is the assembly hall.


PLAYSHED
PLAYSHED
CARETAKER'S HOUSE
METER HOUSE
INFANTS PLAYGROUND
P L A Y G R O U N D
POOL
INFANTS CLOAKS
DRYING
GIRLS CLOAKS
DRYING
BOYS CLOAKS
DRYING
GAMES EQUIP.
BOILER ROOM
ASSEMBLY HALL
STAGE
AUDITORIUM
CLOAKS
WOMEN
MEN
ENTRANCE HALL
MEDICAL
SECRETARY
STAFF
ADMIN
ROAD
OUTDOOR TEACHING
INFANTS CLASSROOMS
JUNIOR CLASSROOMS
PAVED COURT
DINING ROOM
KITCHEN
DINING
NORTH
HANDICRAFT ROOMS
FIELD END PRIMARY SCHOOL · EASTCOTE
HOWARD V. LOBB F.R.I.B.A
ARCHITECT
FEET
20 0 50 100 150 200 250 300 350 400 450 500 550

The plan.



The classroom wing.

the edges by light metal sections all suspended from the roof trusses.

The corridor roofs are constructed of 1½-in. "Thermacoust" wood-wool slabs resting on the lower flanges of 4 in. by 1¾ in. steel joists at about 2-ft. centres, and forming permanent shuttering to concrete roof slab reinforced with mesh. The roof finish is of asphalt covered with white spar chippings.

The assembly and dining halls have similar roofs, except that the "Thermacoust" slabs are 2 in. thick and have their edges reinforced with light metal sections that enable them to span between 4 in. by 3 in. purlins at about 6-ft. centres, making a lighter and cleaner construction. External walls are 11-in. cavity construction, with brown external facings. Partitions are 4½ in. thick, and the internal work generally is fair-faced, with white bricks above a 3 ft. high brown brick dado.

The windows consist of steel casements extending generally the full width between stanchions. In the classrooms all the lights open. Minimum daylight factor at working positions in the classrooms is 2.04 per cent., after 20 per cent. has been deducted for glazing and dirt. This figure, though barely above the minimum demanded in the regulations, represents in practice an ample quantity of daylighting. External and internal cills and mullions are constructed of pressed steel. The main contractors were Messrs. John Laing and Son, Ltd., and foundations were carried out by the general contractors from designs by Mr. E. J. Cook, B.Sc. (Hons. Eng), A.M.Inst.C.E.

Principal sub-contractors were :—

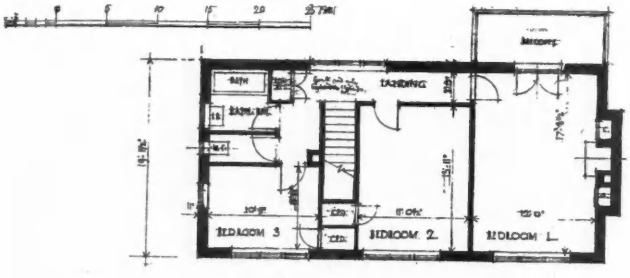
Steelwork, Lindsay's Paddington Iron Works, Ltd., and Dorman, Long & Co., Ltd. ; pitched roofing, Robertsons Building Service ; flat roofs (wood-wool slabs), The Cementation Co., Ltd., (asphalt finish) Limmer & Trinidad Lake Asphalt Co., Ltd.; reinforced concrete floors, Diespeker & Co., Ltd. ; bricks, The Uxbridge Flint Brick Co., Ltd.; floor finishes (asphalt), Limmer & Trinidad Lake Asphalt Co., Ltd., (wood block and strip) Horsley, Smith & Co. (Floors), Ltd. (floor clips by The Adamite Co., Ltd.), (granolithic) Stuart's Granolithic Co., Ltd., (terrazzo) Art Pavements & Decorations, Ltd., (floor and wall tiling) S. A. Forbes & Son ; fibreboard ceilings, Specialised Construction, Ltd. ; decorative and fibrous plaster work, Clark & Fenn, Ltd. ; heating and ventilating, Rosser & Russell, Ltd. ; electrical work, Barlow and Young, Ltd. ; stage lighting equipment, Venreco, Ltd. ; radio and public address equipment, Philips Electrical, Ltd. ; cloak-room fittings, Clark, Hunt & Co., Ltd. ; clocks, English Clock Systems, Ltd. ; light fittings, Troughton & Young, Ltd. ; metal windows, Crittall Manufacturing Co., Ltd. ; blinds, J. Avery & Co. ; curtains, Gerald Holtom (designs by Evelyn Hunt) ; sanitary fittings, W. N. Froy & Sons, Ltd. (Caretaker's House) John Bolding & Sons, Ltd. ; plumbing and C.W. services, J. H. Shouksmith & Sons, Ltd. ; gates, frames to play sheds, Light Steelwork (1925), Ltd., Alfred Lockhart, Ltd. ; fencing, Peerless Fence & Products, Ltd. ; ironmongery, Yannedis & Co., Ltd. ; kitchen fittings, Ministry of Works ; precast concrete items, Malcolm MacLeod & Co., Ltd., Girlings Ferro-Concrete Co., Ltd. ; projection room shutters, etc., J. Frank Brockliss, Ltd. ; furniture, Middlesex C.C. & Kingfisher, Ltd., (play equipment) Paul & Marjorie Abbatt (World Export), Ltd. ; planting and horticultural work, Clark & Co. ; acoustic tiles, Horace W. Cullum & Co., Ltd. ; mirrors, Clarke & Co. (Hoxton), Ltd. ; ladders, Drew, Clark & Co., Ltd. ; lightning conductors, J. W. Gray & Son, Ltd. ; glass domes, T. & W. Ide, Ltd. ; glass bricks and ferro-glass work, J. A. King & Co., Pugh Bros., Ltd. ; hose reels, The Pyrene Co., Ltd. ; bicycle parking blocks, Stelcon (Industrial Floors), Ltd. ; telephones, London Tele-communications Region ; Tarmacadam, Wilsons Surfacing, Ltd. ; rolling shutters, Haskins Rolling Shutters.

FIELD END SCHOOL, EASTCOTE. The assembly hall.

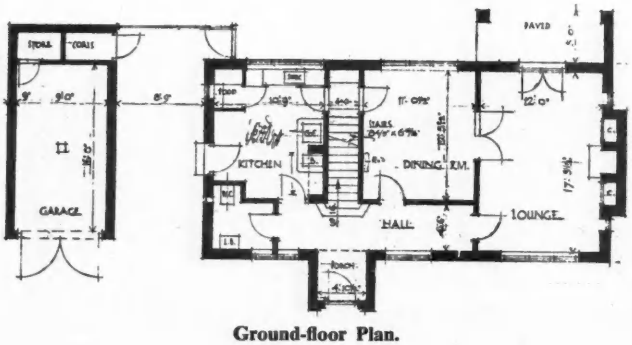
Garden front of one of the smaller houses.

HOUSES AT WOOD END CLOSE, HEDGERLEY, BEACONSFIELD

FRANK ROSCOE, A.R.I.B.A., ARCHITECT



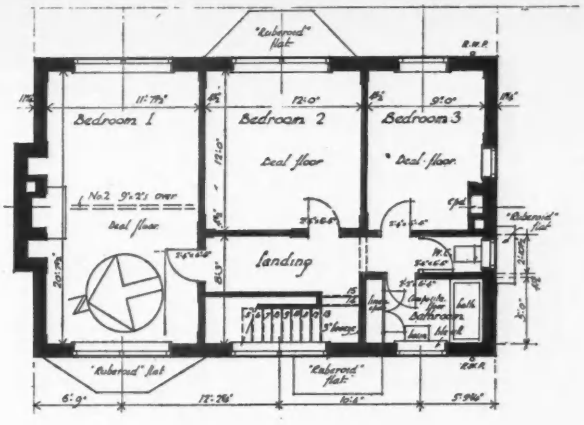
First-floor Plan.



Ground-floor Plan.

THIS IS A SMALL ESTATE COMPRISing eight houses built by Messrs. William Hartley and Sons, of Wexham, near Slough, to the designs of Mr. Frank Roscoe, A.R.I.B.A. The six smaller houses each contain three good bedrooms with a large and spacious garden back and front. The houses were built between 1936 and 1938, and were sold for £1,350 each freehold. The two larger houses (four-bedroom type) were sold for £1,500. The construction consists of 11-inch cavity

Entrance front of another of the smaller houses. The plans are of another of the smaller houses.

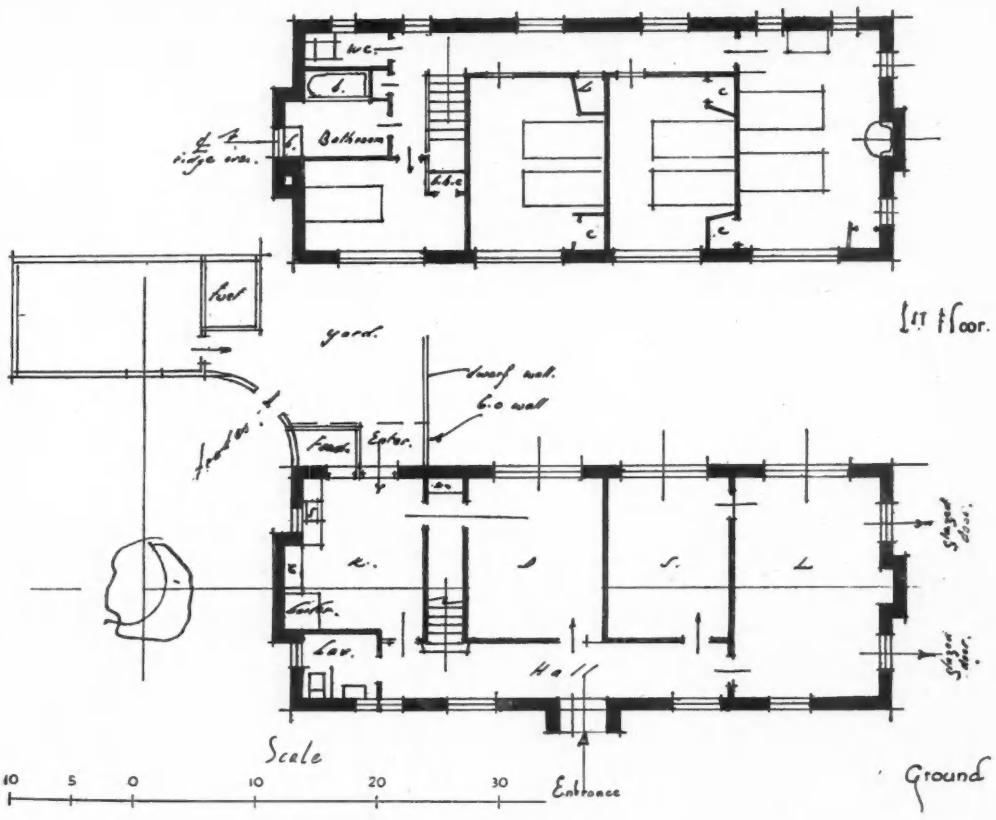


walls, with good local facing bricks and roofed with pantiles. The floors are of pine, with quarry tiles in the kitchen. Light iron railings were made by a local blacksmith, and the porches are lead covered. The houses have Crittall windows with wooden surrounds to the architect's design. The porch posts are of timber. A feature is the gate, which is of a field type design in character with the surrounding country. The garages are 9 ft. by 16 ft. and have sliding " round-the-corner " doors.

HOUSES AT WOOD END CLOSE, HEDGERLEY, BEACONSFIELD

FRANK ROSCOE, A.R.I.B.A., ARCHITECT

Entrance front of one of the larger houses.



HOUSES AT WOOD END CLOSE, HEDGERLEY, BEACONSFIELD

FRANK ROSCOE, A.R.I.B.A., ARCHITECT

View from harbour of five Type "A" blocks.

GOVERNMENT HOUSING SCHEME, GIBRALTAR

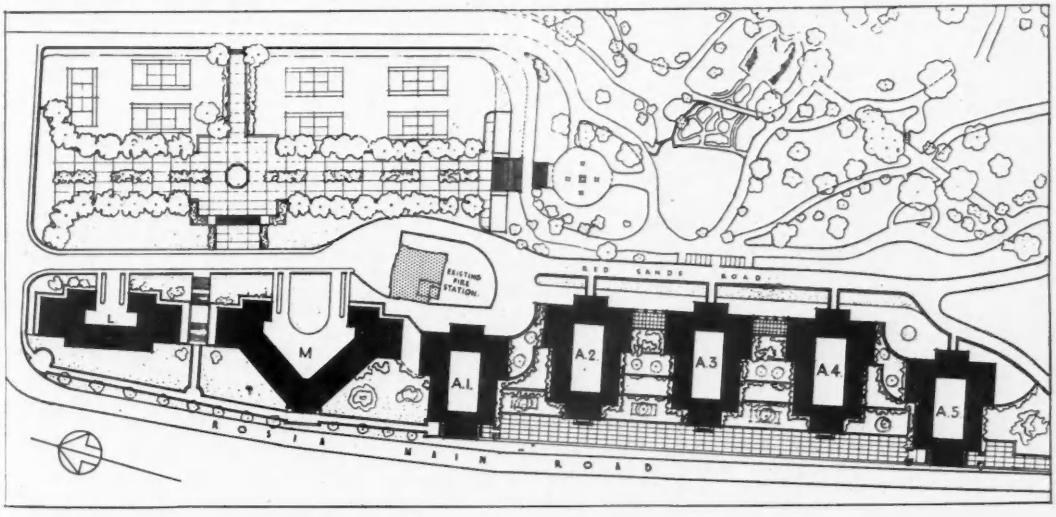
ROBERT ATKINSON and A. F. B. ANDERSON, FF.R.I.B.A., ARCHITECTS

with a team of consultants under the general direction of

R. W. FOXLEE, C.B.E., M.Inst.C.E., CHIEF CIVIL ENGINEER, CROWN AGENTS FOR THE COLONIES

AT the end of the war the housing situation in Gibraltar was complicated by returning evacuees, many of whom during the war had married and now had families of their own. Before the war many Gibraltarians lived in Spain, but this was no longer permitted by the Spanish authorities.

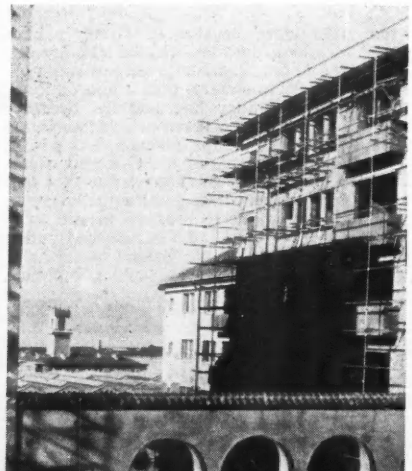
When the need for new housing first became apparent, it was quickly realised that considerable difficulty would be experienced in the choice of sites. Gibraltar is too well known to warrant description, but at the western base of the Rock exists a sloping plain of red sand, most of which is occupied by the town. Several other sites investigated and in some cases actually surveyed, and for which preliminary drawings were prepared, had extremely steep slopes on rock and had to be abandoned. The original scheme was for 1,000 flats, of which 473 are now under construction in Governor's Meadow and Lower Alameda Gardens. One of the earlier schemes anticipated the erection of three blocks of flats in the Upper Alameda Gardens—these were abandoned because of strong public opinion. Both the selected sites are on the sloping red sand plain just south of the city boundary, with a fine outlook over Gibraltar Bay and the Spanish hills beyond. Governor's Meadow, as the name perhaps indicates, was where the dairy herds of the Governor were allowed to graze, and was one of the few places where grass actually grew. This was due to artificial means, as a layer of clay had been formed under the surface of the ground to act as a rain catchment area. As a building



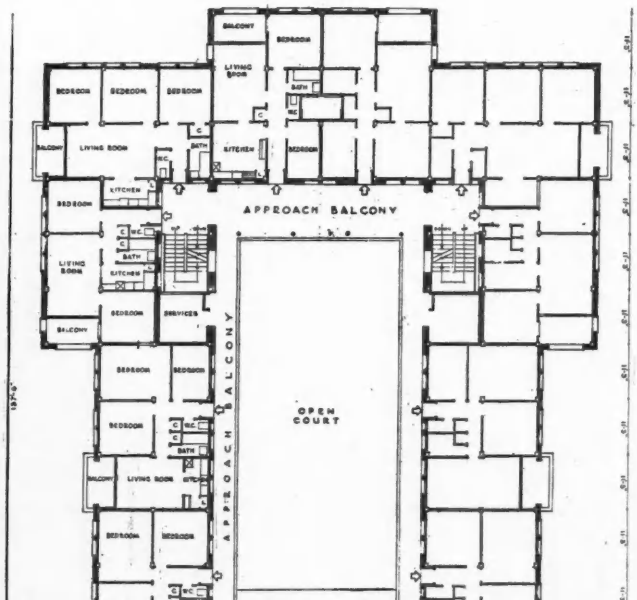
Block A3 from Rosia-road.

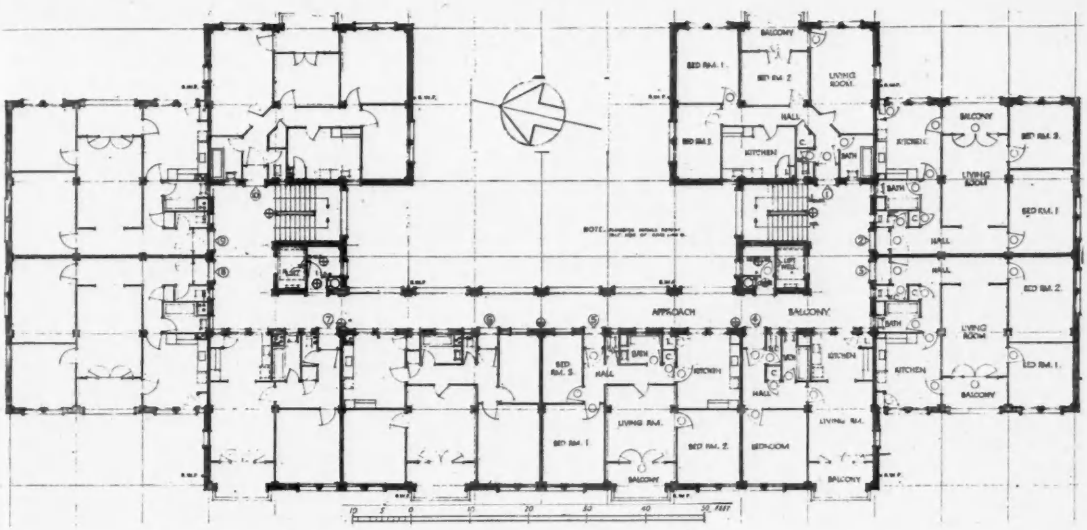
site, however, it was treacherous, as water from the upper Rock passed below the sand-bed and it had until now been condemned for building. To overcome this, it meant an expensive foundation structure. The Lower Alameda Gardens, accepted as an alternative site to the Upper Alameda, adjoins Governor's Meadow on the north side and was the northern limit of this very fine public park. Grand Parade, which also adjoins these sites, was found an ideal space for use as a storage depot for the contractors.

The 473 flats have been divided into seven blocks. Five of them, known as "A" Blocks, are all on Governor's Meadow. These are connected by a long terrace on the sea side, under which have been built water storage tanks accommodating 200,000 gallons.

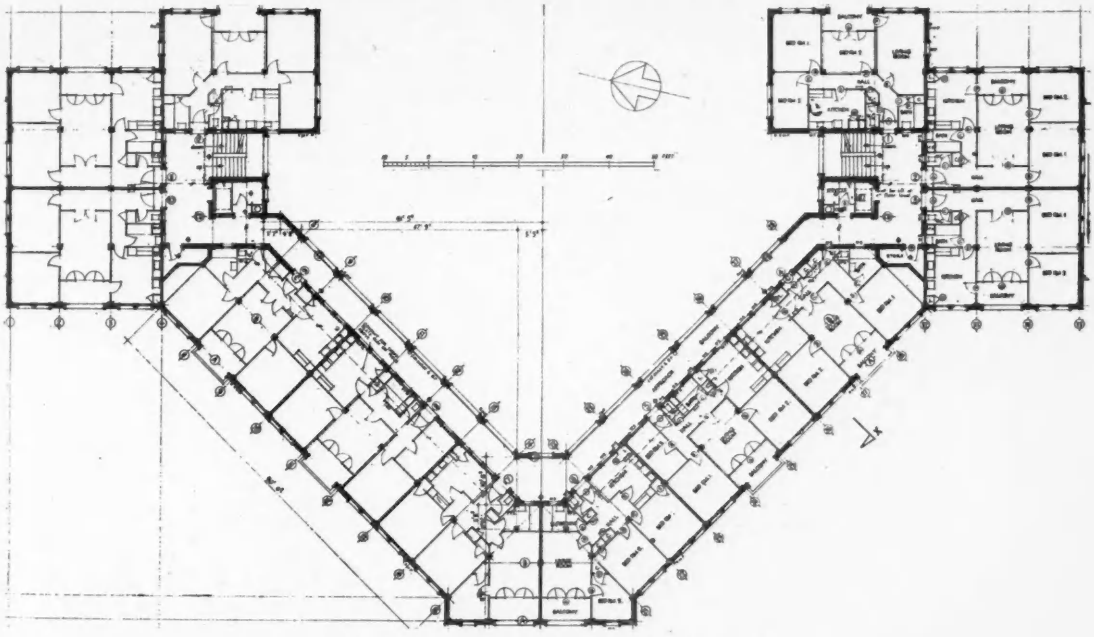


Arcade between Blocks A2 and A3, from Alameda Gardens. *Right*: **Typical plan of Type "A" blocks.**





BLOCK L.—Typical plan of floors 2, 3, 4, 5 and 6.



BLOCK M.—Typical plan of floors 2, 3, 4 and 5.

The blocks have been designed so that all unpolluted water can be collected, as Gibraltar has no natural source of drinking water apart from the winter rainfall. The "A" Blocks are all identical as far as site conditions would allow, each containing about 60 flats, planned around an internal courtyard with access balconies. In these blocks the flats are of the three- and two-bedroom variety; but there are a few of the one-bedroom type. A pram and cycle store has been provided and also a washhouse area.

On the Lower Alameda Gardens site, the remaining accommodation is provided in two blocks known as "M" and "L" Blocks. The elevations are similar in character to the "A" Blocks, but the planning system is a little different, as the access balconies form part of an outside wall, there being no internal courtyard. These two blocks are based on a slightly enlarged grid, so that each flat becomes a little larger than those of the "A" Blocks, and the blocks themselves are larger, having a greater height. Consequently two lifts are provided in each block as well as the usual pram, cycle store and washhouse area.

Since approximately 2,500 people will be accommodated in the entire scheme, it has been decided to provide a few shops and kiosks. Town planning has been considered, under the direction of Mr. Clifford Holliday, now at Stevenage, and the layout around the blocks is being carried out in co-operation with the local Town Planning Commission and the City Engineer.

The contract was placed with Messrs. Humphreys, Ltd., of Knightsbridge, London, at the end of 1946. During the early stages of the job they erected an office compound in Grand Parade. This office compound was divided into two sections, half of which was occupied by their own staff and the other half providing office accommodation for Resident Architect, Resident Quantity Surveyor, Clerk of Works and their respective assistants.

It was felt by the contractors that a number of their senior executives would be reluctant to come to Gibraltar for a period as long as three years and live with their families in hotels. Permission was therefore obtained to erect seven prefabricated bungalows.

The site was handed over to the

contractors on December 1, 1946. Owing to the nature of the subsoil, extensive excavation was necessary before a good firm foundation of red sand was reached. The intention was to lay a 9-in. concrete carpet over the whole of Governor's Meadow, but it was found that before this could be done it was necessary to lay a 2-in. carpet of a very weak binding concrete to prevent erosion of the ground before the 9-in. carpet was in position.

Along the entire eastern boundary (which was the highest portion of Governor's Meadow) ran a system of batteries and screen walls—known as the Victoria Battery, and built about 75 years ago.

Block "L," looking North. In background is "the Queen of Spain's Chain."

It was not until July, 1947, that most of the southern portion of the Victoria Battery was cleared away and down to the required levels.

The laying of the 9-in. site carpet followed along closely behind the excavation, and by June 90 per cent. of the cover for Block A3 and 70 per cent. of blocks A4 and A5 was complete.

The foundation beams were laid as soon as possible after completion of the necessary portions of the site carpet, but for some time progress was very slow, as the complicated placing of the steel reinforcing bars was an entirely new type of work to the Spanish labourer employed on the job.

The very cold spell experienced in England early in 1947 and the subsequent fuel crisis had unfortunate repercussions on the general progress of the job, particularly in regard to the rolling and fabrication of the steel framing. As a result of the after dislocation caused by the crisis and later shipping delays, it was actually not until mid-September that a start was made on the erection of steel of the first block.

Having once trained the local steel fixers to handle the steel, it was found that only two months per block were required to complete its entire erection.

When the housing scheme was first envisaged, it was anticipated that an all-Spanish labour force could be built up, skilled craftsmen being drawn upon from such towns as Cadiz, Seville and Madrid. This idea had, however, to be abandoned, as the Governor of Algeciras considered the housing problem in La Linea already acute enough without any fresh influx, as it was thought that one workman would bring an average of six relatives with him.

Few of the Spaniards employed on the job, mostly already resident in La Linea, were craftsmen, and there was little experience of working on schemes as large as this one. Consequently, at each new phase of the job the Spanish labourer had to be shown what to do—with all directions being given, often through interpreters, by foremen from England.

Masons and bricklayers were brought from England and were accommodated in special dormitory blocks built for them on the site. A specially appointed Welfare Officer was responsible for the maintenance of good working and living conditions for all men employed on the site.

Of the 52 men who came from Italy, 26 were plasterers and 26 masons. The plasterers have not altogether come up to expectations, but some have turned out to be good floor tilers.

All materials, with a few exceptions, have had to be imported. The United Kingdom and Spain were the main sources of supply. The exceptions were stone and sand.

Sand, at one time, was acquired from a recent landslide on the eastern side of the Rock, but later it was brought by lorry from the Spanish beaches beyond the frontier, and this source has been drawn upon ever since.

The United Kingdom provided most of the materials. Cement, during the early stages, was the most important item, and this was sent out in steel drums.

"Carcassing" timber and flush doors came from Sweden, but all other joinery was made in England. Licences had, of course, to be obtained. Other materials included all electrical fittings, copper pipes for plumbing, stoneware for drains and various waterproofing materials such as bituminous felt and lead. Electric wiring and lighting fittings were supplied by Troughton and Young, Ltd.

From Spain, materials such as floor tiles, terracotta partition blocks and roofing tiles were obtained.

The floor tiles are very diverse in pattern and quite different from the usual sort of tiles seen in England. The tile is made up of cement and the colour and design are stamped on to a thickness of about 3/16 in. The design varies from a geometric pattern to a floral design where as many as four tiles are required to complete the pattern.

The local terracotta partition blocks are inferior to the English blocks of the same variety, and many contain specks of gypsum, which, if not eliminated, result in a blistering of the plaster coats.

"Spanish tiles" have been used on the roofs. Here a certain difference of opinion on the method of laying and fixing these tiles has been encountered, the local Gibraltarian method varying slightly from the one advocated, as far as one can gather, by the Spanish artisan. Here the Gibraltarian recommendations have been adopted. It has been the policy to use local methods as far as possible, as it is more likely to achieve good results with the labour employed.

Many difficulties have been encountered and overcome, and it is generally thought that the "A" Blocks, which are well on the way to completion, should now proceed quite normally, as quickly as the labour circumstances will allow. The "L" Block has now all its steel erected and it is hoped that the experience gained on work on the "A" Blocks can be put to good purpose on both "L" and "M" Blocks.

Difficulties are being experienced on "M" Block at the moment, because of the unexpected depth of a good firm soil, and certain revisions to foundations have had to be made in consequence. When these foundations are complete, it is expected that the entire block will be completed in approximately 12 months' time—thus completing the present contract.

Recently sample colours have been tried on courtyard walls, doors, windows, etc., and six specimen flats have now been completed with all fittings. These flats have been visited by many local officials and some of the general public, and their reactions have been most gratifying. It is felt that when the complete scheme is finished, it will set a new standard of housing in the Colony, which, under present conditions, has been long overdue.

A NEW VIEW OF FLORENCE

Mr. Osbert Lancaster's Talk at the A.A.

THE Architectural Association's first meeting of the New Year attracted a crowded attendance at 36, Bedford-square, W.C.2, on January 5, when Mr. Osbert Lancaster, Hon. A.R.I.B.A., gave a talk on Florence. Mr. R. E. Enthoven (president) was in the chair.

MR. LANCASTER gave a new view, and an unfavourable one, of the famous city. He said that up till the first half of the nineteenth century Florence had been regarded by cultured people in this country as the perfect combination of Avalon and the New Jerusalem. He had visited the city as a youngster, shortly after the first German war, and had not been disappointed. He had seen what he had expected to see. During the following years, in spite of many changes in other ways, he had remained constant in the conviction that, architecturally considered, Florence was the finest of cities; but as a result of a fortnight's visit last year the conviction had been borne in his mind, and had since grown steadily stronger, that not only was Florence not entitled to be thus regarded, but that it was one of the most drearily unsuccessful examples of ambitious planning that it would be possible to find.

Mr. Lancaster explained the criteria by which he judged the beauty of cities. There was a wo-dimensional beauty like that of a painted landscape, and of this Constantinople was the best example. The view of that city from without was supremely beautiful; but this favourable impression disappeared when one walked within the city. There was another form of beauty which involved progression, and might in that way be considered akin to music. Viewed from without such a city might not be beautiful but, taking Dublin for example, if one walked along the Liffey from opposite the Four Courts to College Green, and thence by Merrion-square and Mount-street to the canal, one would be delighted by a constant succession of scenes dependent for their effect upon ever new combinations of architectural proportion—large expanses of pink brick, painted quoins, a classic portico, and occasionally a distant view of the Wicklow mountains, framed between diminishing perspectives of sober, eighteenth-century façades. Taken singly these effects were without significance, but in an orderly progression they built up a great architectural composition. Some cities, e.g., Venice, had both these sorts of beauty, and there was a third class, usually small places, worth consideration because of one or two buildings of particular merit. Such were the cathedral cities where one great masterpiece dominated the whole, and in relation to which everything else must be considered and planned.

Florence did not deserve its high reputation from any of these points of view. Seen from without the one great architectural feature that presented itself was the cupola of the Duomo, and with this the speaker was evidently not very favourably impressed. In the city itself he found the Lung Arno dull, "If one compares that long row of buildings stretching unaccented and unrelieved by variety of texture or colour from the Trinita to the Ponte Vecchio with the north side of the river Liffey, one realises just how barren the achievements of academic knowledge unrelieved by vernacular spontaneity or personal idiosyncrasy can be." The Ponte Vecchio he described as a "slummy bazaar on piles." Walking thence northwards to the Palazzo della Signoria one would expect something of progressive three-dimensional beauty, but the component parts did not come together to form a whole, the momentary scenes remained a collection of unrelated subjects; the celebrated dome never rose up unexpectedly, dominating all, as did that of Saint Paul's in London.

Brunelleschi's Handiwork.

A closer inspection of Brunelleschi's handiwork showed that the cathedral was not the one great building which could lend point to an otherwise inconsiderable city. The Duomo, although comparatively speaking a failure, was the best thing about it. Looking at the west front of the building one was thankful for the comparative restraint of our own Gothic revivalists. He would not speak of that, but looking at the interior, vast yet not spacious, lofty yet not soaring, one saw that nothing could have saved it but some exceptional quality of colour or texture. But the whole building was carried out in a ghastly khaki stone with far less surface quality than concrete. The Campahile alongside displayed a sensitivity and invention that one sought in vain elsewhere in Florence, but, dwarfed by the vast bulk of the cathedral, it was almost impossible to appreciate its quality. The Baptistry also was a fine building in its own right but, like the Campanile, it was swamped by its dreary surroundings.

The Piazza della Signoria was, in Mr. Lancaster's view, the most mismanaged open space in Europe with the possible exception of Trafalgar-square. In one of its corners jutted out uncomfortably the Palazzo Vecchia, ill-proportioned, top-heavy, justifiable neither on functional nor monumental grounds. The Loggia di Lanzi, a not unpleasing building, could make little or no impression alongside the vast bulk of the Palazzo Vecchia.

Architecturally the Victorians and the Florentines had two faults in common: they had no sensitivity to surface texture and no ability to establish a satisfying relationship between one building and another. Many of the great Florentine Palazzi were equal to the best in Rome or Venice, but they failed of their full effect owing to a complete absence of the contrast which texture might provide. Elsewhere a stone-built palace gained enormously through the juxtaposition of ochre or red-washed façades in various degrees of fading and dilapidation; but in Florence everything was carried out in the same hideously textured stone. The really fine things in Florence either swamped their neighbours or were swamped by them. It was exactly this disadvantage which dogged Victorian architects. Nor were those faults confined to a past generation; buildings were still being erected showing as little consideration for the landscape on which they were situated as any in Victorian London or mediæval Florence.

Discussion.

DR. N. PEVSNER said he had not visited Florence for 15 years, but, speaking from memory, he disagreed with Mr. Lancaster, who, when revisiting the city, had probably expected to find a Florence much in the terms of his own amateur views of urban landscape. But urban landscape in that sense had not existed in the minds of those responsible, not for shaping Florence—because no one was responsible for that—but responsible for shaping the buildings. Dr. Pevsner had noticed the absence of anything like regular planning in Florence, but the city had impressed him in another way. In the course of a few centuries those square blocks had been put up one after another in the very narrow streets of a mediæval town. They did not lack the three dimensional quality; on the contrary, they had the same emphatic stress on the third dimension as a Renaissance picture had when compared with a mediæval picture. But each remained one unit, and with the exception of that one corner by the Loggia di Lanzi, there was perhaps no other place where the positive effect of Florence was not that of one square solid block after another. Presumably the Victorian architects, as evidenced by Pall Mall, had the same idea of erecting one building after another in its own style, and this adding of block to block was, to his mind, the great attraction of Florence, and perhaps was one that could make one overlook the lack of surface appeal, as to which he entirely agreed with Mr. Lancaster.

MR. R. SHEPPARD said there was tremendous texture in the palaces and smaller chapels of Florence. He did not look at a Renaissance building for the texture of the stone, but looking at the way the builders made the stone in blocks and built the thing up, from that point of view the texture was admirable.

MISS WHINNEY said she agreed as to texture with the last speaker rather than with Mr. Lancaster; one should look at the inside of a building. The earlier Renaissance architects in Florence had been as much interested in the inside of their buildings as in the outside. There was also the planning: by the application of mathematics to the plan the Renaissance architects conceived they could carry their knowledge of reality a little further, and thereby gain control of a larger world. To a modern eye, to her own, at any rate, the interior of San Lorenzo had a satisfying quality which was, she was told, due to the mathematical relations of the plan and the interior spatial composition. The interior of the Baptistry chapel was extremely beautiful in colour.

Replying to some of the points raised, MR. LANCASTER said that Miss Whinney had said the Florentine architects were more interested in the interior of their buildings than in the exterior. In this he entirely agreed, but it was what he complained about. Similarly, he agreed with Dr. Pevsner that the great square blocks had a tremendous three-dimensional effect, but as to looking at those buildings it was a difficult gymnastic feat, because most of them were up very narrow streets. His remarks were not to be taken as strictures on Italy: his criticism of Florence was that it did not come up to the level of the rest of that country. One should go to Florence, but one should also see Siena and other smaller towns.

L.C.C. Dwellings at St. John's Wood.

AT the closing session of the public inquiry into L.C.C.'s proposal to acquire 30 acres in St. John's Wood for building 4,000 working-class dwellings Mr. J. R. Willis, counsel for the L.C.C., gave an assurance that the Council would not erect buildings architecturally unsuitable in the area.

ARCHITECTURAL EDUCATION

R.I.B.A. Comments on MARS/A.S.A. Report

SHORTLY after the Mars Group and 'Architectural Students' Association Interim Report on Architectural Education was published, the officers of the R.I.B.A. Board of Architectural Education stated in the R.I.B.A. *Journal* and the professional Press that they were not prepared to accept the statistics set out in the concluding sections of the Report without a careful examination, which was being undertaken. This examination has now been completed.

The officers of the Board of Architectural Education do not propose to comment upon the Report as a whole, but to confine their observations to those sections of the Report which deal with numbers under training, external students, and the summary of numbers—*i.e.*, paragraphs 70 to 75, inclusive.

For ease of reference certain paragraphs of the Mars/Arch.S.A. Report are reproduced, and the comments of the officers of the Board are given below the paragraph or paragraphs to which they apply.

Paragraph 70: *"It is often assumed, particularly by the Londoner, that training in a Recognised School is now the normal method of entry to the profession. And this assumption is inferred in the R.I.B.A. Report of the Special Committee on Architectural Education of* 1943, *where apropos the present decline of pupilage and apprenticeship it is stated that 'in the meantime the R.I.B.A. must maintain its own system of qualifying examinations for the benefit of those who, for one reason or another, have not passed through a Recognised School.' But a scrutiny of the numbers qualifying by external examinations and through the Recognised Schools reveals an astonishingly different state of affairs, for since* 1935 *the number of students taking the external examinations has greatly exceeded the number qualifying through the Recognised Schools. In* 1938 *the proportion was two to one, and to-day the difference is even greater."*

The authors of the MARS Report are presumably referring to the Final Examination. The officers of the Board of Architectural Education have noted the use of the word "taking" in the case of the R.I.B.A. external examinations and the word "qualifying" in the case of the Recognised Schools. The numbers "taking" the R.I.B.A. external examinations in any year are swollen by a large number of relegated candidates taking the examinations two or more times. These candidates thereby are counted at least twice. Similarly to include those candidates who are taking the R.I.B.A. external Final Examination in Part I, Design, only, or Part II, the remaining subjects, only, would lead to false conclusions.

The officers of the Board have made a comparison as between Schools of Architecture recognised for exemption from the R.I.B.A. Final Examination and the R.I.B.A. external Final and Special Final Examinations. This comparison shows that in the year 1947 the figures were as follows:—

Final Recognised Schools.	*R.I.B.A. External Final and Special Final Examinations.*
No. Passed.	*No. Passed.*
328	338

Paragraph 71: *"The picture is still more striking when we compare the numbers in the Recognised Schools in* 1938-39 *and* 1946-47 *with the total number studying architecture* (i.e., *all R.I.B.A. Probationers and Students). In* 1938-39 *those outside the Recognised Schools outnumbered those inside by more than five to one, and in* 1946-47 *by nearly three to one."*

The following figures show that the number of students and probationers outside the Recognised Schools of Architecture exceeded the number of students in the Recognised Schools by just over two to one in 1938 and under two to one in 1947-48:—

Year.	*Number of Probs. and Students as per Annual Report.*	*Numbers attending Recognised Schools.*	*Difference.*
1938	6,796	2,040	4,756
1947–48 ..	12,840	4,550	8,290

Paragraph 73: *"The rate of wastage amongst these external students is very large, for if we make the reasonable assumption that the great majority of students in Recognised Schools complete their courses and qualify, and compare the total numbers enrolling as R.I.B.A. probationers with the total numbers becoming associates, six to ten years later, we find that pre-war figures show about* 30 *per cent. falling by the wayside. The remaining* 70 *per cent. appear to have taken on the average about ten years to qualify. Even so, the number of external students due to enter the profession as qualified men in the near future is considerable, for, making the fairly generous assumption that the present strength of the Recognised Schools is in the nature of* 4,000 *as compared with their pre-war strength of* 1,500, *it appears that there are to-day nearly* 8,000 *young men and women training to be architects outside the Recognised Schools. At the pre-war rate of wastage about* 5,500 *will qualify —*500 *more than the total number of associates in* 1945."

The officers of the Board of Architectural Education have experienced some difficulty in determining how the conclusions in this section were reached. The authors of the Report may have overlooked the existence of the R.I.B.A. Special Final Examination, which is open to persons in practice and architectural assistants over 30 years of age, and the fact that candidates taking this examination are not required to have enrolled as probationers. The following table shows for the years indicated the number of probationers enrolled compared with the number of associates R.I.B.A. elected:—

Year.	*Probationers enrolled.*	*Associates elected.*
1929–30 ..	614	141
1930–31 ..	616	195
1931–32 ..	576	201
1932–33 ..	498	223
1933–34 ..	545	314
1934–35 ..	507	303
1935–36 ..	574	301
1936–37 ..	604	361
1937–38 ..	761	364
1938–39 ..	967	420
1939–40 ..	653	392
1940–41 ..	411	299
1941–42 ..	519	170
1942–43 ..	694	185
1943–44 ..	817	133
1944–45 ..	1,008	116
1945–46 ..	1,134	159
1946–47 ..	1,897	284
1947–48 ..	1,627	681

It must always be borne in mind that the probationership is not a class of membership of the R.I.B.A. Enrolment as a probationer is merely an acknowledgment that the potential student has reached the required standard of general education for entry into the profession. In the year 1947-48 the number in attendance at the Recognised Schools of Architecture was actually 4,550.

Paragraphs 74 *and* 75.

Paragraph 74: *"It is extremely difficult to determine how these* 8,000 *are preparing themselves to be architects, for no centralised records exist from which it is possible to find out the types of training received by candidates for R.I.B.A. External Examinations. But we may perhaps arrive at some measure of the importance of the 'unrecognised' schools from the numbers of students in some of these schools during the session* 1946-47. *The inquiry carried out by this committee obtained information from* 22 *of the* 55 *schools circulated, and in these* 22 *schools a total of* 656 *students were studying architecture, of whom* 494 *were working for their Intermediate and* 52 *for their Final Examination (leaving a balance of* 110 *who presumably did not propose to qualify). Of those working for the Intermediate* 259 *were taking a part-time and* 235 *a full-time course, and of those working for the Final* 33 *were part-time and* 19 *full-time. If we make a cautious estimate of the total number of students in all 'unrecognised' schools who are working for R.I.B.A. examinations by adding approximately* 50 *per cent. to the above figures, we arrive at a round figure of about* 800."

SUMMARY OF NUMBERS

Paragraph 75: *"The present position, therefore, can be summed up in the following approximate figures:—*

(a) *A total of* 4,500 *students in the Recognised Schools—a figure presumably temporarily swollen above the pre-war figure of* 1,500 *by interrupted studies and particularly by the attractive Ex-Service Grants which have encouraged many students to attend these schools who would not otherwise have been able to afford to do so.*

(b) *A total of about* 800, *or at the most about* 1,000, *in the 'unrecognised' schools, a figure which may perhaps be somewhat increased in the near future when these establishments attract the balance of students who can afford some school training but who cannot afford a 'Recognised' School without the help of an Ex-Service Grant.*

(c) *A total of about* 7,000 *who are preparing for R.I.B.A. examinations without any school training whatsoever, not even part-time evening courses. Many of these presumably make use of one of the correspondence courses, but it is impossible to say how many. A large proportion are almost certainly working in offices as unqualified assistants, and a number—and perhaps a surprising number—are, even to-day, articled pupils."*

In response to an inquiry made by the officers of the Board of Architectural Education, the MARS Committee have informed the officers of the Board that the figure of 8,000 "young men and women training to be architects outside the Recognised Schools" is derived from the following numerical summary appearing in the R.I.B.A. Calendar 1948-49:—

Students	3,033
Probationers	10,224
Total	13,257

The MARS Committee assumed that roughly one-third of the students (1,011) had taken their R.I.B.A. Final Examination or had passed an equivalent examination in a Recognised School, or were working in offices pending election as associates R.I.B.A. This meant that approximately 12,000 were engaged in the study of architecture. In the absence of exact statistics the MARS Committee assumed that 4,000 of these were in Recognised Schools of Architecture, leaving 8,000 outside the Recognised Schools.

In Paragraph 75(c) it is stated that there is a total of about 7,000 who are preparing for the R.I.B.A. examinations *without any school training whatsoever*, not even part-time evening courses. Many of these, it is stated, presumably make use of one or other of the correspondence courses, but it is impossible to say how many.

The figure of 7,000 has presumably been arrived at by deducting from the total 13,257 referred to, the numbers stated in Paragraph 75 (a) and (b) to be in attendance at the Recognised Schools of Architecture, and at the schools included in the R.I.B.A. list of schools for full-time preparation for the R.I.B.A. External Examinations, and in the list of Schools of Art and Technical Institutions with facilities for the instruction of intending architects.

Against this total of 7,000 the following statement shows for the session 1947-48 the number of students in the Recognised Schools, the "Listed" Schools, and the "Facilities" Schools. This information is based on returns made by the schools concerned in January and March.

Number of Students R.I.B.A. and Probationers as at July		13,257
Number of students in—		
Recognised Schools taking exempting courses ..	4,553	
Recognised Schools *not* taking exempting courses	880	
Listed Schools	1,408	
Facilities Schools	923	
		7,764
		5,493

The officers of the Board consider that in view of the fact that about 1,000 Probationers were enrolled between January and July, and a fair proportion of this number would have fulfilled this requirement as a pre-condition of entry into a school the following September, it would be only fair to make allowance at the other end for the places in the Schools vacated by those who completed their course in July.

At an approximate estimate this figure is in the neighbourhood of 470, in the Recognised Schools alone 470

5,023

In the view of the officers of the Board, therefore, it appears that instead of 7,000 students and probationers who the Report states are preparing for the R.I.B.A. examination without any school training, the number at its greatest computation does not exceed 5,000, and this number would be subject to considerable reduction if allowance were made for—

(1) Probationers who have taken the R.I.B.A. Special Final Examination (open to persons in practice and architectural assistants over 30 years of age whose applications have been approved by the Board of Architectural Education) and become associates R.I.B.A.

Over the last three years at least 130 candidates taking the Special Final Examination were probationers, the number in July reaching 65 out of a total of 341 candidates.

(2) Probationers who have become licentiates. During the past 12 months 142 licentiates have been elected. It has not been possible in the time available to analyse all these applications, but out of 25 applications it has been established that 10 are probationers.

(3) Probationers and students who are taking correspondence courses. The officers of the Board have ascertained that for the year 1947-48 there was a total of just over 3,100 students taking the various correspondence courses operating in this country. This does *not* include Navy, Army and Air Force personnel taking the War Office correspondence courses. It should be noted that awards under the Government Further Education and Training Scheme are made for the students preparing for the examinations by means of correspondence courses to supplement experience gained in offices.

A high proportion of students taking correspondence courses do so because they live out of reach of any school facilities. For such students, correspondence courses provide a legitimate means, in fact the only means, of organised study.

From the above information it will be realised that the figure of 7,000 students is reduced to just over 1,700 whose methods of training are unknown. This figure of 1,700 includes probationers whose deaths have not been notified to the R.I.B.A. and other probationers who have abandoned the profession without giving notification of the fact; for example, women who have given up their studies on marriage.

After making all deductions, conclude the Board's officers, the residue is negligible.

SOCIETIES AND INSTITUTIONS

R.I.B.A.

Members Elected.

ON December 14 the following members were elected:—

AS HON. FELLOWS.

The Earl of Ilchester (London); The Right Hon. Viscount Samuel, G.C.B., G.B.E. (London).

AS HON. ASSOCIATES.

O. Lancaster (London); S. Sitwell (Towcester).

AS HON. CORRESPONDING MEMBERS.

E. F. Burckhardt (Switzerland); W. A. Delano, M.A. (New York); G. Eliassen (Norway); N. E. Eriksson (Sweden); K. Fisker (Denmark); P. G. Hedqvist (Sweden); S. I. H. Lind (Sweden); F. C. Lund (Denmark); A. Lurcat (France); G. Michelucci (Italy); P. P. Monteiro (Portugal); R. J. Neutra (California); A. Roth (Switzerland); G. Samona (Italy); E. Sundahl (Sweden); L. M. Van der Rohe (U.S.A.); C. M. T. William-Olsson (Sweden).

AS FELLOWS.

H. Kendall, O.B.E. (Richmond, Surrey); I. H. McLaren (London); A. L. McMullen, M.A. (Bristol); B. Peake, A.A.Dip. (London); E. L. G. Ross (Bristol); A. Underhill (London); W. E. Wolff (Torquay); H. A. Clark (Gresford); S. A. Farmer (London); G. J. Jolly (Saltdean); J. Konrad, A.M.T.P.I. (Hull); K. J. Lindy (Loughton); P. Moro (Greenwich).

AS ASSOCIATES.

J. B. Ackland (Bristol); R. W. Adams (Warrington); A. Aitken (Aberdeen); F. Alderson (Easington); G. S. Alderson (Manchester); F. Allan (Edinburgh); R. Allan (Dewsbury); K. Allerton (West Bridgford); D. D. Attwater (Preston); F. H. Ayton (Newcastle-on-Tyne).

J. E. A. Baikie (Crawford); B. Bailey (Birmingham); A. P. E. Baker (Gravesend); R. E. K. Bance (Sunbury-on-Thames); J. C. Barker (Dewsbury); F. R. Barnes (Hampton); A. W. C. Barr (London); P. R. Barrett (Colne, Lancs.); J. Bates (Newcastle-upon-Tyne); K. M. Baxter (Manchester); N. S. Bean (Hull); G. J. Beard (London); J. Belchamber (Nottingham); D. Bennis (Hove); A. W. Benson (Leeds); B. Bercott, B.Arch. (Liverpool); R. J. Bickford (Co. Dublin); A. N. Blackburn (Batley); H. W. Blackwell (Belfast); J. P. Blockley, M.C. (London); M. K. Borland (Miss) (Glasgow); P. H. Bosanquet (Marlborough); S. P. Bowen (Didsbury); F. J. Bowering (Canterbury); C. L. Boxell (Brighton); S. Bradley (Bingley); I. T. Brand (Edinburgh); N. H. F. Brazier (Chelmsford); W. J. Broadbent (Miss) (London); F. W. A. Bromage (Leominster); J. Brooke (Miss) (London); J. Brown (Musselburgh); W. G. Brown (Turriff); W. N. Brown (London); A. M. Buchanan (Troon); E. Burd (Miss) (Fulford); D. W. Burford (Carshalton); H. E. Buteux (London); J. C. Butters (Ipswich); D. Buttle (Goole).

B. J. Caldwell (Miss) (Camberley); J. R. Cane (Birmingham); A. J. Carruthers (Giffnock); P. H. G. Chamberlin (London); P. C. Chapman (London); D. E. Chester (Miss) (Barnton); H. J. Chitty (Inverness); A. G. Christopherson (Newcastle-upon-Tyne); I. M. Clark (Marazion); R. K. Clark (Newcastle-on-Tyne); R. L. Clark (Sutton); J. A. Claydon (Bedford); J. C. Clayton (Belfast); G. I. Clothier (London); E. W. D. Clunies-Ross (Sevenoaks); A. B. Coates (Miss) (Limpley Stoke); G. E. Coburn, M.B.E. (London); G. A. Cole-Evans (Swansea); E. Collinge (Bolton); P. Collins (Leeds); H. Connell (Mauchline); R. G. Connett (Dublin); A. F. Cook (Wakefield); M. M. Cooke (Proud Cross); J. G. Coppock (Manchester); L. M. Cordwell-Smith (London); P. B. Corney (Edgbaston); G. T. Cotton (Wordsley); P. R. Coulton (Bury St. Edmund's); R. E. B. Councell (Clevedon); E. M. S. Cousin (Miss) (London); M. McPherson Crammond (Chelmsford); P. A. Cranswick (Scawthorpe); A. I. Cripps (Tilehurst); A. E. Crocker (Ditchling); P. F. Croft (London); W. B. Crosland (Preston); A. Cross (London); J. R. Crochley (Malvern); D. H. Cunningham (Cornhill-on-Tweed); J. Curtis (Burton-upon-Trent).

E. Daley (Whalley Range); A. M. Dalgleish (Monymusk); M. H. Davey (Miss) (Cambridge); G. M. Davidson (London); T. A. B. Dempster (Evesham); R. A. Dick (Beckenham); C. I. Dickie (Miss) (New Deer); A. M. Dixon (Miss) (London); P. D. Dixon (London); A. I. Dobson (London); W. A. Dobson (Halifax); N. J. Dore (Miss) (Pinner); E. G. Doudney (Ilford); F. S. Drake (London); M. E. P. Driver (Miss) (Plymouth); J. W. Duffy (Dublin); A. W. Duncan-Jones (London); O. J. Durrant (Miss) (London).

A. Eden (Headingley); L. C. Edwards (Welshpool); A. J. Elborn (Doncaster); F. H. Eldridge (Lewes); A. W. Elliott (Fowlmere, nr. Royston); B. A. F. Ellsmoor (London); P. G. Elphick (Gosforth); G. M. Elsworth (Miss) (Shrewsbury); D. M. Evans (London).

B. W. Fairlamb (Newcastle-on-Tyne); C. Featherstone (Bishop's Stortford); B. G. Fender (Westcliff-on-Sea); A. K. Field (Miss) (London); A. Fitch (Newcastle-on-Tyne); B. J. Fleming (London); G. H. Fletcher (Middlesbrough); A. Flinder (London); J. W. Foden (Warrington); R. J. G. Forestier-Walker (Rhiwderin, Monts.); J. P. Foster (Hemingford Grey); R. C. Foulkes (Colwyn Bay); G. D. Frankish (Hull); D. P. Freeman (London); F. W. French (Enfield).

B. Galbraith (Warrington); M. Galbreath, B.Sc. (Arch.) (Kingston-on-Hull); J. L. Gardner B. Arch. (Miss) (Oxford); W. A. Gibon, B.A. (Manchester); P. G. Gibbs, B.A. (Sheffield); S. J. Gibbs (E. Twickenham); J. M. Gilbert (Miss) (London); D. Gilby (Worcester); L. B. Ginsburg (London); J. A. Glen-Bott, M.A. (Haslemere); H. L. Gloag (Watford); J. B. Gnosspelius (Miss) B.Arch. (Coniston); J. Gonsalves (London); J. F. Goodchild (Miss) (New Malden); R. Gorbing (London); C. A. Gosney (Miss) (Kingswood); G. Graham (London); J. Gray (Gateshead-on-Tyne); J. Gray (Glasgow); W. E. Greaves (Ilford); C. S. Green (Stoke-on-Trent); W. Greenacre (Blackpool); W. G. Gregory (London); S. T. J. Grimm (London).

L. V. Halliwell (Countess Wear); P. J. Hammersley (Miss) (Hadlow Down); A. F. J. Hannaford (London); M. Hardstaff (London); R. Hardy (Edinburgh); K. H. Harker (Truro); G. M. Harper (Wednesbury); L. R. Harris (Burton-upon-Trent); M. R. Harrison (Miss) (St. Ives, Hunts.); H. N. Hartley (Colne, Lancs.); T. C. Hartley (Chester); R. S. Harvey (Whitchurch, nr. Aylesbury); T. O. Haunch, B.A. (Ranby, nr. Retford); A. H. Hawthorne (Cardiff); J. Hayden (Thorpe Bay); R. H. Haydon (West Wickham); J. A. Henderson (London); J. F. W. Hendry (Glasgow); R. D. Henly (London); M. Herring (Miss) (Richmond); A. C. S. Hickes (St. Leonards); M. J. Hislop (Weston-super-Mare); G. C. Hodges (West Croydon); J. G. D. Hodgson (Leeds); A. S. Holmes (Miss) (London); J. C. Holmes (Glasgow); A. Holt (Thornton-le-Fylde); J. Horrocks (nr. Leeds); J. Howard (Miss) (Stalybridge); W. J. Hughes (London); A. Hutton (Dunfermline); H. R. Hyne (St. Ives, Cornwall).

J. Ingoldsby (Newport, Lo.W.); A. L. Irwin (Horsforth, nr. Leeds).

A. Jackson (Dunfermline); P. Jackson (Barnsley); J. K. Jarvis (Dewsbury); C. S. H. Jhabvala (London); J. F. W. Johnson (Sunderland); L. J. Johnson (London); B. W. Jones (Miss) (Wolverhampton); D. M. Jones, M.A. (Wetherby);

E. W. M. Jones (Llanelly) ; M. W. A. Jones (Booterstown, Co. Dublin).

J. R. Kane (London) ; R. W. Kenning (Manchester) ; K. J. Kenny (Newry, Co. Down) ; J. Kershaw (Halifax) ; C. R. E. Kidby (Stafford) ; S. J. C. Kinsman (Bracknell) ; C. M. Kirkland (Mrs.) (Weybridge) ; P. D. Kirkland (Northampton) ; J. Kirkwood (Glasgow).

J. Lamb (Aberdeen) ; R. S. Laskey, B.A. (South Nutfield) ; J. G. Latham (Chorlton-cum-Hardy) ; H. H. E. Lea (Halifax) ; H. Lee (Dunelm, Newcastle) ; F. G. Lees (London) ; C. A. Legerton (Esher) ; C. R. E. Lewis (Stoke-on-Trent) ; F. M. Lewis (Miss) (Cullercoats) ; J. V. Lewis (Ilford) ; M. D. Lewis (Newport, Mon.) ; C. G. Liardet (Carpenders Park, nr. Watford) ; D. Ling (Derby) ; N. Lister (Hull) ; P. H. Liversidge, B.A. (Rotherham) ; J. Lloyd (Miss) (Brighton) ; E. Lloyd Hughes (Smethwick) ; J. P. Lomax (Sheffield) ; P. G. Loutsis (Manchester) ; C. Lowes (Leadgate, Co. Durham) ; L. L. Luck (Taunton) ; F. Lumb (Whitfield).

A. McCombie (Insch) ; A. J. McCowan (Aberdeen) ; A. D. Macdonald (York) ; P. W. MacIver (London) ; G. R. A. Mack (Elkington, nr. Louth) ; V. G. Mackinnon (London) ; J. G. McLeish (London) ; S. J. McMullon (Ilford) ; K. C. Macnair (Bournemouth) ; G. McWiggan (Gateshead) ; J. S. Madew (Newcastle, Staffs.) ; H. I. K. Mair (Dartford) ; C. S. Markbreiter (London) ; F. H. Marker (London) ; D. R. M. Mason (Nottingham) ; P. R. N. Meers (Weybridge) ; H. J. Mein (Nottingham) ; F. Melling (Sheffield) ; A. J. Mellor (Bournemouth) ; J. B. Mellor (Heywood) ; J. Merson (Oldmeldrum) ; U. S. Meyer (Miss) (London) ; P. Middleton (Pierrepont, nr. Nottingham) ; S. W. Midwinter (London) ; K. G. Miller (Wadhurst) ; A. H. Millington (Pinner) ; R. E. Minns, B.A. (Sheffield) ; A. R. Moody (London) ; H. R. Morris (London) ; L. E. Morris (Winchester) ; C. B. Moss (Selby) ; A. Mossman (Edinburgh) ; B. R. Musgrave (Shipley).

V. H. R. Naidu (London) ; R. W. Nelsey (Brighton) ; L. Netts, B.Arch. (Newcastle-on-Tyne) ; P. C. Newcombe (Jnr.) (Benton) ; N. C. Nullis (Westcliff-on-Sea) ; F. A. Nuttall (Leeds).

G. S. Oldham (Rossendale) ; J. Olley (Forest Town, nr. Mansfield) ; E. A. Orchard (Walton, Stafford).

H. S. Page (London) ; A. E. Paget (Widnes) ; R. T. Palmer (Chipstead Valley) ; F. W. Parkinson (Birmingham) ; H. Parsons (Thurlestone) ; D. A. Pate (Preston) ; C. H. P. Pearn (Yelverton) ; G. M. Pearson (Preston) ; H. G. Penfold (London) ; A. L. Petty (Lyndhurst, Hants) ; D. J. Petty, M.B.E., M.A. (London) ; N. M. Phillips (Newcastle-on-Tyne) ; P. R. R. Phillips (Amberley) ; H. W. Pickstone, B.Arch. (Formby) ; E. C. Piggott (Miss) (Gatley) ; R. A. Pitt (Birmingham) ; K. Pollard (Bramhope, nr. Leeds) ; H. H. Porritt (Jesmond) ; W. D. Porter (Richmond, Yorks) ; J. E. Potter (Staines) ; A. L. H. Pratt (Newcastle-on-Tyne) ; H. A. Prest (Felixstowe) ; D. L. Price (Cardiff) ; D. A. Pyment (Campden) ; G. C. Pyne (London).

J. E. Rains (Pinner) ; C. W. Ransom (Taunton) ; L. A. Redgate (Sherwood) ; K. W. C. Reed (London) ; H. M. Reid, B.A. (Glasgow) ; J. F. Rew (Aberdeen) ; D. A. R. Reynolds (Fareham) ; D. M. Rickard (Belper) ; M. E. Rix (Mrs.) (Newcastle-upon-Tyne) ; N. Rix (Jarrow) ; C. H. Roberts (Newcastle-upon-Tyne) ; D. O. Robertson (Dundee) ; H. S. Robertson M.C. (Airdrie) ; R. M. Robertson (Bellshill) ; R. W. K. Rogerson (Glasgow) ; S. P. Ross-Smith (Edinburgh) ; A. Rossi (Consett) ; G. Rudduck (Didcot) ; G. W. E. Rumsby (Bournemouth) ; D. Russell (Leeds) ; J. F. Rusted (London).

W. H. Sanderson (Exeter) ; M. Sargent (Keswick) ; C. H. T. Schutte (Derby) ; J. B. Scott (Edinburgh) ; A. B. Scrivens (Barnet) ; W. G. Sealey (Huddersfield) ; G. K. Seed (Liverpool) ; F. Selby (Bearsden) ; C. G. L. Shankland (London) ; A. H. E. Shearing (London) ; A. D. Shepherd (Tilford) ; F. H. Shepherd (Aberdeen) ; E. Shoolheifer (London) ; D. E. Shooter, B.A. (Ashton-under-Lyne) ; V. Short (near Malton, Yorks) ; J. A. Simpson (Portknockie) ; F. W. Singleton (London) ; G. E. F. Slatter (Cardiff) ; J. C. Smart (Harrow) ; A. F. Smith (Miss) (London) ; R. G. Smith (Birmingham) ; R. O. Smith-Jones (Barry) ; H. R. Souper (Aberdeen) ; T. R. Spaven (Newcastle-upon-Tyne) ; R. D. Spurr (London) ; L. G. Stephen (Aberdeen) ; H. R. Stewart-Hunter (Sutton) ; P. J. Stillman (Miss) (London) ; G. L. Strath (Banff) ; M. G. Straus (Richmond) ; R. E. Summers (Clifton) ; F. A. Sunderland (Burley-in-Wharfedale) ; E. W. Sykes (Norwich).

G. P. W. Taylor (London) ; J. Taylor (Preston) ; P. H. Taylor (Belper) ; C. S. Thakore (Glasgow) ; R. H. C. Thomerson, C. de G. (Cowley) ; E. G. Thomson (Glasgow) ; J. G. Tinker (Leamington Spa) ; D. A. Tomkinson (Crewe) ; H. D. B. Torrance (Hamilton) ; H. W. Trant (Pinner) ; R. W. Trebilcock (Sacriston) ; K. C. Twist (Hertford).

C. R. Vass (Farnborough) ; M. G. F. Ventris (London) ; J. S. P. Vulliamy (London).

C. P. Wakefield-Brand, M.B.E. (Ryton) ; C. F. Walker (Edgbaston) ; D. E. Walker (Brough) ; M. Walker (London) ; J. V. Wall (Gloucester) ; K. G. Wallace (Rutherglen) ; C. K. Wearden, B.Arch. (Preston) ; J. Webb (Stourbridge) ; C. B. Wells (Bramber, near Steyning) ; J. E. West (London) ; P. E. Wheatley (Hull) ; H. A. Wheeler (Stranraer) ; A. W. V. White (London) ; D. I. White (London) ; D. P. Whitehorn (Capt.) (Edinburgh) ; J. D. Whitehouse (Alderley Edge) ; P. H. Whyman (Poynton, near Stockport) ; G. H. Wigglesworth (London) ; F. A. Wilkinson (Aylesbury) ; G. H. Wilkinson (Barnsley) ; J. T. Willcox (Newcastle-upon-Tyne) ; H. L. Williams (Cults) ; A. E. Williamson (Bristol) ; A. H. Wilson (Doncaster) ; A. M. S. Wilson (Nottingham) ; J. A. R. Wilson (Peterborough, Northants) ; S. Wilson (Selby) ; N. H. D. Winder (Heswell) ; P. D. Windle (Baildon) ; J. Wollerton, M.C. (Sheffield) ; B. H. J. Wood (Miss) (Southampton) ; J. W. H. Woodhams (Belfast) ; V. W. Worley (Addiscombe) ; J. Wright (Reigate) ; T. P. Wurr (London).

D. S. Yates (Newcastle-upon-Tyne) ; C. Young (Leeds) ; K. M. Young (Perth).

AS LICENTIATES.

G. F. Abbs (Cambridge) ; A. N. Anderson (West Ewell) ; J. A. Dargie (Eccles) ; K. M. Fraser (Glasgow) ; S. J. Garton, F.S.A. (London) ; W. R. P. Hall (Southsea) ; F. W. Keyworth (Leicester) ; P. F. Lawson (Bearsted) ; B. Marriott (London) ; C. L. Paice (High Lane, near Stockport) ; P. R. Prop (West Bromwich) ; K. G. Sparrow, M.A. (Maidstone) ; F. Whiteley, B.A. (Wilmslow) ; J. I. Williams (Penmaenmawr) ; G. H. Yeoman (Tunbridge Wells).

Town Planning Diploma

Mr. Maurice B. Patience (A), having passed the qualifying examination, has been awarded the R.I.B.A. Diploma in Town Planning.

A.A. SCHOLARSHIPS

THE Council of the Architectural Association offers the following scholarships in architecture for 1949:—

The Leverhulme Scholarship (£200 per annum); The Minter Open Entrance Scholarship (£100); The Sir Walter Lawrence Open Entrance Scholarship (£100); The Metal Window Scholarship, presented by The British Metal Window Manufacturers' Association, Ltd. (£75 per annum); The Natural Asphalte Council Scholarship, presented by The Natural Asphalte Mine-Owners' and Manufacturers' Council (£50 per annum); The Northern Aluminium Scholarship, presented by The Northern Aluminium Company (£50 per annum); The Patent Glazing Scholarship, presented by The Patent Glazing Conference (£50 per annum).

The scholarships, which are tenable for five years at the A.A. School of Architecture, will be available to students of British nationality. They will be awarded for one year, with the intention that they shall be renewed from year to year until the student has completed the course; renewal being subject to a satisfactory report of the student's progress, and to proof of the continued need for such assistance.

The Metal Window Senior Scholarship, presented by The British Metal Window Manufacturers' Association, Ltd. (£50 per annum), which is tenable for two years, is open to students of British nationality who have passed the Intermediate Examination of the R.I.B.A., either externally, or at another recognised school of architecture, and is for entry to the fourth year of the course, and, subject to satisfactory progress by the student, will be renewed for the fifth year.

Full particulars and forms of application may be obtained from the secretary of the Architectural Association, 36 Bedford-square, W.C.1, and forms of application should be received not later than April 1 next, for all except the Leverhulme Scholarship, for which the date is June 1. In 1950 and thereafter the closing date for this scholarship will be April 1.

R.I.C.S.

Junior Organisation

There will be a meeting of the junior organisation of the Royal Institution of Chartered Surveyors at 12, Great George-street, on January 24, at 6 p.m. A cine-film. "The Building of a Factory in Thirteen Weeks," by Mr. G. D. Walford, F.R.I.C.S., will be shown. The annual dance of the junior organisation will be held at Bush House Restaurant, Bush House, Aldwych, W.C.2, at 7.30 p.m. on February 4.

R.I.B.A. PRIZES AND STUDENTSHIPS

AWARDS FOR 1949

AT a General Meeting of the Royal Institute of British Architects held on January 11, the Council's Deed of Award giving the results of the competitions for the annual prizes and studentships awarded by the R.I.B.A. was read.

The results of the various competitions are as follows:—

The Tite Prize, a Certificate and £100 for the study of Italian architecture.—A. C. Mackintosh (Stud. R.I.B.A.) (Sch. of Arch., Edinburgh Coll. of Art).

The Victory Scholarship, and £120.—W. F. Howitt (Stud. R.I.B.A.) (Sch. of Arch., Dundee Coll. of Art). A Certificate of Honourable Mention was awarded to : A. J. Gordon, Dip.Arch. (Dist.) (Wales), A.R.I.B.A. (Welsh Sch. of Arch., The Tech. Coll., Cardiff).

R.I.B.A. Silver Medal for Measured Drawings and £75.—B. A. F. Ellsmoor, A.R.I.B.A. (Bartlett Sch. of Arch.).

The Royal Institute Silver Medal and £50 for an Essay.—H. B. Leather (Student, R.I.B.A.) (Birmingham Sch. of Arch.). A Certificate of Honourable Mention was awarded to : C. G. L. Shankland, M.A. (Cantab.), A.R.I.B.A. (Cambridge Univ. Sch. of Arch. and A. A. Sch. of Arch.).

The Owen Jones Studentship : (A Certificate and £100).—(Miss) N. R. Glover, A.R.I.B.A. (Sch. of Arch., The Polytechnic, Regent-st., London).

The Arthur Cates Prize : £100.—Not awarded.

The Banister Fletcher Silver Medal and 25 gns. for the Study of History of Architecture.—D. W. Insall (Student, R.I.B.A.) (R.W.A. Sch. of Arch., Bristol).

The Alfred Bossom Research Fellowship £250 : for Post Graduate Research.—D. B. Nield, A.R.I.B.A. (Sch. of Arch., The Polytechnic, Regent-st., London).

The Neale Bursary: £100 *for the Measurement of Old Buildings.*—H. A. Wheeler, Dip. Arch. (Glasgow), A.R.I.B.A. (Glasgow Sch. of Arch.).

The Hunt Bursary: £75 for the Encouragement of the Study of Housing and Town Planning.—(Miss) J. P. Reynolds, B.Arch. (Liverpool), A.R.I.B.A. (Liverpool Sch. of Arch.).

The Athens Bursary: £125 for Study at the British School at Athens.—J. Needham, Dip.Arch. (Leeds), F.R.I.B.A. (Sch. of Arch., Dundee Coll. of Art).

The Rome Scholarship in Architecture, 1948.—Not awarded.

The Ashpitel Prize, 1948.—Name to be announced later.

The R.I.B.A. Silver Medal and £10 in Books for Students of recognised Schools of Architecture.—G. M. Harper, A.R.I.B.A. (Birmingham Sch. of Arch.).

R.I.B.A. Bronze Medal and £10 in Books for Students of Schools of Architecture.—A. G. Smith (Probationer R.I.B.A.) (Oxford Sch. of Arch.).

The Archibald Dawnay Scholarships, 1948 : *Five Scholarships of £65 each for the Advanced Study of Construction,*—(1) R. C. Marshall (Student R.I.B.A.) (Leeds Sch. of Arch.). (2) K. Pollit (Student R.I.B.A.) (Leeds Sch. of Arch.). (3) F. Shaw (Student R.I.B.A.) (Leeds Sch. of Arch.). (4) A. P. Roach (Student R.I.B.A.) (Dep. of Arch. Northern Polytechnic, London). (5) A. R. C. Johnston (Student R.I.B.A.) (Liverpool Sch. of Arch.).

The R.I.B.A. Henry Jarvis Studentship at the School of Architecture, The Architectural Association, 1948, £50.—P. A. Newnham (Student R.I.B.A.)

R.I.B.A. Howard Colls Travelling Studentship at the Architectural Association, 1948, 15 gns.—T. G. Bidwell.

R.I.B.A. Donaldson Medal at the Bartlett School of Architecture.—T. F. A. Manning (Student R.I.B.A.).

R.I.B.A. Prize for Art Schools and Technical Institutions (£10 in Books), 1948.—M. R. Taylor (City of Canterbury Coll. of Art).

R.I.B.A. Prizes for Public and Secondary Schools.—(a) *Essays :* (1) A prize of £1 11s. 6d. to K. R. Tyler, Reigate Grammar School, for his essay on the County Hall, London. (2) A prize of £1 11s. 6d. to A. Brown, Dr. Morgan's School, Bridgwater, for his essay on St. Mary's Church, Berrow. (b) *Sketches :* (1) A prize of £5 5s. to R. B. Lord, Manchester Grammar School, for his drawings of St. John the Baptist Church, Adel. (2) A prize of £1 1s. to M. E. Calvert, Northampton Grammar School, for his drawings of St. Matthews Church, Northampton. (3) A prize of £1 1s. to W. B. Worrall, University College School, Hampstead, for his drawings of Lincolns Inn.

The President, Mr. Michael Waterhouse, M.C., will present the medals and prizes for 1949 and will deliver an address to students, at a general meeting to be held at 66, Portland place, London, W.1, on Tuesday, February 8 next, and a criticism will be given by Mr. Anthony Chitty, M.A., A.M.T.P.I.(F.), of the work submitted.

Fine Art Commission Appointment.

Mr. Louis de Soissons, A.R.A., F.R.I.B.A., S.A.D.G., has been appointed a member of the Royal Fine Art Commission, in place of Sir Leslie Patrick Abercrombie, who has retired.

PRESTRESSED CONCRETE

SOME BRITISH EXAMPLES

From a Special Correspondent

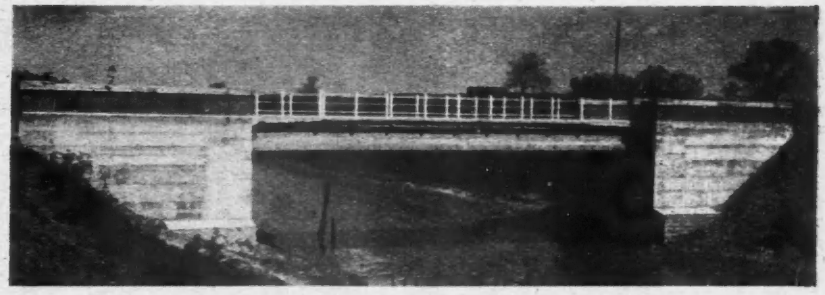


Fig. 2.—Nunn's Bridge, Lincs.

IN many descriptions of prestressed concrete so much prominence is given to works constructed abroad that the extent to which this method of construction is being employed in this country is not generally realised. Although some foreign structures may be more impressive than those in Britain, the principles, which were described fully in the report of Mr. Elliott's paper (*The Builder*, December 3, 1948), are the same and there are examples of most of the more common methods of prestressed construction of bridges, buildings, and precast concrete products.

The bridges illustrated in *Figs.* 1 and 2 are examples of two methods. The Adam Viaduct, near Wigan (*Fig.* 1), has three spans each of about 29 ft. and carries a double line of railway. The prestressed concrete girders, which are 32 in. deep and of which there are 64, were precast in 1946 at the concrete depot of what was then the London, Midland and Scottish Railway, at Newton Heath, Lancashire. Each girder contains 42 high-tensile wires stretched to a stress of 70 tons per square inch before the concrete was cast around them. When the concrete had hardened sufficiently the stretching force was released and the reactions to the force in the wires induces a compressive force in the concrete in which the wires are embedded.

Nunn's Bridge (*Fig.* 2), near Boston, Lincolnshire, is a road bridge having a single span of 74 ft. carrying a road 17 ft. wide over Hob Hole drain and replaces a three-span brick bridge built by Rennie. This structure differs from the Adam Viaduct in so far that all the work was done on the site. When the temporary timber shuttering was erected for the three main girders, which have an overall depth of only 4 ft. 3 in., 12 cables each containing 12 high-tensile wires were placed in position. Some of the cables lie in the bottom of the girder and others are curved upwards towards the ends of the girder. The concrete was then deposited in the shuttering and, when it had attained sufficient strength, jacks were attached to the ends of the wires of each cable in turn and the wires were stretched. As the cables are surrounded by a metal sheath they were free to extend and the reaction was taken on the hardened concrete, that is, the beams were prestressed. The ends of the wires were then anchored, the cables grouted in the sheaths and the jacks released.

Two of the advantages gained by adopting prestressed construction for these bridges, for which the Freyssinet process was used, are reduced constructional depth and saving in steel, and freedom of the concrete from cracks under the working load. Realisation of these, among other, advantages has led the Eastern Region of British Railways to place a contract for the replacement in prestressed concrete of the superstructures of five existing over-line bridges on the line between Manchester and Wath, which is now being electrified as the first stage of the Manchester-Sheffield-Wath scheme. The prestressed concrete beams are being made on the Hoyer system. Composite construction incorporating some cast *in situ* concrete is being used for two of the bridges because of the restricted constructional depth available. The cost of the superstructures in prestressed concrete is less than that for filler-joist construction.

Buildings.

Of greater interest to architects may be the use of prestressed concrete in buildings actually erected. In the single-storey extension of a textile factory completed in 1948 at Tiverton, Devon, the problem of providing valley beams of the smallest depth and weight of steel to carry steel north-light trusses was solved by using prestressed concrete girders. The extension, which is a weaving shed, is 143 ft. long and 54 ft. wide inside. Each girder (*Fig.* 3) is 54 ft. 7 in. long, but is only 2 ft. 9 in. deep at midspan. The girders, of which there are eight, were cast on the ground floor of the factory and were prestressed by cables contained in sheaths embedded in the concrete in accordance with the Belgian method of prestressing, the Magnel-Blaton system. Whereas in the bridges described in the foregoing all the wires in one cable were stretched simultaneously, in this case two wires only were stretched at a time, and therefore a jack of less power was required. The girders are supported on brick piers and are at about 21 ft. centres.

The first instance of the use of the Belgian method in Britain was in the strengthening of the masonry tower of St. Luke's Church, Silverdale, Staffordshire, which had suffered damage due to subsidence. Cement grout was injected into the defective masonry to consolidate sufficient of the stonework to form a beam in each wall of the tower. Chases were cut in the inner and outer faces of the wall and several wires fixed at one end to a strongback were laid in each chase. The wires were stretched by a jack and the free ends were then fixed to a similar strongback (*Fig.* 4). This imparted a compression in the beam formed in the wall and should further subsidence take place enables the beam to act and support the tower above without cracking.

In the single-storey buildings for the extension of the offices of the British Overseas Airways Corporation, prestressed precast concrete columns are used in conjunction with aluminium-alloy trusses to form light portal frames, as described in *The Builder*, November 19, 1948.

The system in which many fine wires are incorporated in the structural member has been applied in some instances, notably in some secondary beams in the floor of a paint factory at Chadwell Heath, Essex, and in columns, valley gutters, rafters and purlins in a building now in course of construction at Bristol. The secondary beams at Chadwell Heath have an average span of 20 ft. and are 16 in. deep and 8 in. wide and support a heavily-loaded cast-*in situ* floor slab. Speed of manufacture and great strength were attained by using high-alumina cement for the concrete. The beams were made at a factory some distance from the site, as were the prestressed precast members for the building at Bristol. The columns in the latter building are of octagonal cross-section and are hollow, the cavity being filled with concrete after erection. They act virtually as vertical cantilevers and as such are subjected to bending in any direction, as well as to direct loads. Increased resistance to bend-

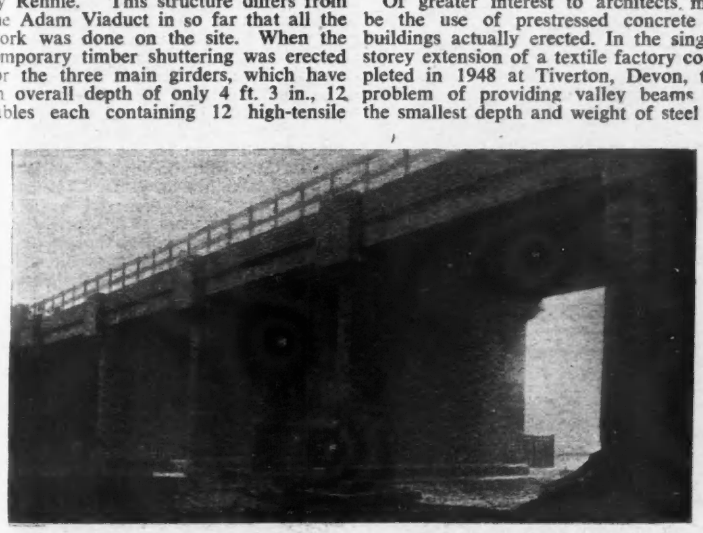


Fig. 1.—Adam Viaduct, near Wigan.

ing without cracking is obtained by prestressing, without which a much larger column with much more steel would be required. The prestressed columns are 18¼ in. wide at the bottom and 12¼ in. wide at the top, and are about 19 ft. long, and extend 8 ft. into the ground, where a large concrete *in situ* base is provided.

Symptomatic of the interest being taken in the advantages to be obtained from prestressing is the programme of development instituted by the Ministry of Works. Not only is the theory of this method of construction being investigated but practical mechanical appliances for carrying out the process are being devised. From development contracts placed with firms manufacturing prestressed concrete members, considerable experience in manufacture is being obtained. Among the main interests of this programme are floor joists for houses and transmission-line and telegraph poles. Prestressed concrete floor joists have been inserted experimentally in houses built by the Ministry. At present investigations of methods of prestressing after the concrete has hardened are being made and experimental prototypes of beams of large span and suitable for production on a large scale have been made. Commercial concerns are also experimenting with building frames, cable-poles, floor beams and other concrete members where lightness and small dimensions allied with great strength are required. Prestressed concrete sleepers have for several years been made on a commercial scale in England and a new factory for this purpose is being laid out in Scotland. Prestressed construction has also been applied to foundations.

The architects, engineers, contractors and manufacturers concerned with the structures described in the foregoing are:

ADAM VIADUCT: Chief engineer to the L.M.S. Railway, Mr. W. K. Wallace, M.Inst.C.E.; design of prestressed girders and prestressing apparatus, the Prestressed Concrete Co., Ltd.

NUNN'S BRIDGE: Engineer to the Witham Fourth District Drainage Board, Mr. G. E. Buchner, A.M.Inst.C.E., A.M.I.W.E.; consulting engineers, Messrs. Mouchel and Partners, Ltd.; prestressed work designed and supervised by the Prestressed Concrete Co., Ltd.

BRIDGES FOR EASTERN REGION: Prestressed beams manufactured by Dow-Mac (Products), Ltd.; general contractors, Messrs. Wellerman Bros., Ltd.

FACTORY, TIVERTON: Prestressed beams designed by Stressed Concrete Design, Ltd.; contractors, Messrs. William Cowlin and Son, Ltd.

ST. LUKE'S CHURCH, SILVERDALE: Architect, Mr. Harold Goldstraw, A.R.I.B.A., consultant for subsidence to the National Coal Board; consulting engineer, Mr. H. Mason, M.I.Min.E., in collaboration with Dr. P. W. Abeles; contractors for prestressing operations, Messrs. J. A. Stirling and Co., Ltd.; cementation of walls, the Cementation Co., Ltd.

Fig. 3.—Prestressed valley girder for weaving shed, Tiverton.

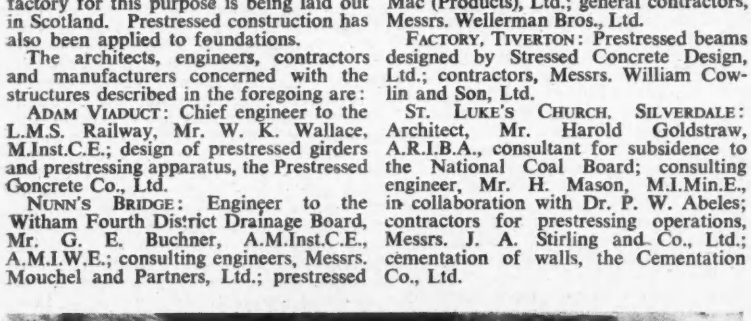


Fig. 4.—Use of prestressed concrete to strengthen masonry tower of St. Luke's Church, Silverdale.

PAINT FACTORY, CHADWELL HEATH, AND FACTORY AT BRISTOL: Consulting engineers, Messrs. C. W. Glover and Partners; manufacturers of prestressed members, Atlas Stone Co., Ltd.

RESTORATION OF ST. CLEMENT DANES AND ST. MARY-LE-STRAND

WORK has commenced on the restoration of St. Clement Danes, the famous Wren church in the Strand, which was destroyed in an air raid and is now an empty shell. First of all, parts of the building which are unsafe will be removed, for it is possible that frost might dislodge loose stones in the winter, and there is also a danger of the stones of the tower, which were split by the fire, falling into the street.

After repairs have been completed, the floors will be relaid and a new roof constructed. The galleries are to be rebuilt and the interior restored, but details have not been settled. Fortunately, the treatment which the walls received immediately after the damage has helped them to withstand the weather. The steeple is said to be in good condition and the bells have been preserved. It is not yet known how long the work will take. It is hoped that work of restoration on the neighbouring church, St. Mary-le-Strand, will be completed within two years. The roof of this church was damaged by blast and much of the work to be carried out will be designed to protect the ceiling of James Gibbs' church. The architect for these tasks of restoration is Mr. William A. Forsyth, F.R.I.B.A.

Compulsory Purchase in the City.

LAST October, the Minister of Town and Country Planning informed the Common Council of the City that he proposed to make a compulsory purchase Order of 230 acres for the purpose of dealing with war damage. The City Corporation had asked for an Order to be made in respect of 272 acres. A copy of the Order and of the map may be inspected at the Town Clerk's Office, 55-61, Moorgate, E.C.2.

CORRESPONDENCE

Incentives: A Criticism.

TO THE EDITOR OF *The Builder*.

SIR,—The Government's repeated call to industry in recent times has been for greater production, and this includes the building industry. Therefore, I am at a loss to understand the reason for Mr. Collier's destructive criticism of incentive schemes in your issue of December 31, as these schemes are an honest and painstaking attempt by the National Joint Council to carry out the Government's wishes. I asume that your correspondent is a builder and a loyal member of the N.F.B.T.E. If he can support "what he has heard"—that builders are paying increased rates not related to output—it is his duty to report this to his local Association as it is a breach of the Working Rule Agreement.

I suggest that if there is to be "chaos, dissatisfaction and disgust" (to use Mr. Collier's own words), it will only embrace those who cannot or do not wish to see the proven advantages of a scientifically applied incentive system. The National President has repeatedly urged members to persevere with incentives but, unfortunately, there are some firms who, through stubbornness, lack of imagination or initiative, are blind to progress. Mr. Collier "feels convinced" that builders who have tried incentives realise they are uneconomic! His attitude is not based on experience or facts. He has obviously sought for confirmation of his views from those who are of his opinion, and not from those who have gone into the matter with enterprise, initiative and an unbiased mind.

Mr. Coppock has already stated that the London County Council has a splendid scheme which is operating quite well. The Minister of Works has stated that houses that took 15 months to build now only take 11 months, and local authorities and many of your correspondents have testified to the benefits derived through incentives by clients, builders and operatives.

My own experience has taught me that nothing is possible without effort, that incentive systems can be applied to most of the work we builders undertake, repetition or otherwise, and that they can bring handsome rewards to employer and employee when intelligently, fairly and justly applied. They can also give cost statistics of incalculable value, the benefit of which far outweighs the cost of any additional administrative staff.

F. RUSSON, Director,
C. Bryant and Son, Ltd.
Small Heath,
Birmingham, 10.

TO THE EDITOR OF *The Builder*.

SIR,—How good it was to read Mr. H. R. Collier's letter on incentives in your issue of December 31. What he wrote has been needed for some time as a counter-blast to the pæans of praise issuing from spokesmen of Associations and Ministries. The large majority of builders does not like the incentive system, for reasons which Mr. Collier has so aptly expressed. There are, however, some very cogent reasons in addition to those he mentioned, which he doubtless omitted in order to be brief. Here are some more reasons for the dislike of the present system.

1. The most important objection of all is that extra payment for speed only is a direct negation of craftsmanship, and invites sloppy work. This is true of both repetition and of higher-class work. Any clerk of works will agree that it is impossible to supervise every inch of the work, so that bad work may not be evident until it is too late. The future maintenance costs on incentive work may, in years to come, prove the bad economics of the system. A type of tradesman is being encouraged who will give the industry a bad reputation in the future and may lead to the undermining of the mutual trust between the architect, builder and client. "The best of its respective kind" should be the goal to aim at.

2. The system is glaringly unfair in two respects. The wrong man may be getting the payment, and many who deserve a reward cannot possibly earn one. There are many jobs which are done at daywork rates or cannot be accurately measured. The percentage of those engaged in jobbing and the like as compared with the total is much larger than many would seem to realise.

3. If every operation were to be scheduled, a series of volumes the size of the Encyclopædia Britannica would be required; the present W.D. Schedule would be as a minnow to a whale beside such a basis. A staff such as only a Ministry can afford would be necessary (and a Ministry does not have to make a job pay!).

4. I am unable to believe in the reduced cost argument. If, say, 50 per cent. of any saving is given to the worker and the other 50 per cent. is absorbed by the working of the system (to say nothing of the inevitable waste of material by those whose only object is to save their own time), where does the client come in? If the rate is cut to the worker on the next job, then there will be a major cause for complaint. It is possible, of course, to work a type of incentive without all these expenses, but this is only half guesswork and half favouritism to keep the grumblers quiet. It therefore becomes more inequitable than ever.

I have tried to put these other points as shortly as possible with the result that I have left, inevitably, many loopholes for criticism and argument. It would take far too long to go into each item at the length that has been given to the official spokesmen in the past. The net result is—as was foretold by the opponents of the measure, and as described by Mr. Collier—a state of chaos and "blackmail" in the wage structure of the industry. There has been too much theory and too little experience in the industry lately. There was a saying in my youth: "Don't try to teach your grandmother to suck eggs!" Let us hope for the time when the law of supply and demand will make its influence felt once more; that is not so subject to human frailty as man-made theory. Then we shall recover, not before.

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Site Organisation.

TO THE EDITOR OF *The Builder*.

SIR,—I hope Mr. H. F. Broughton, when he was addressing builders at Birmingham (reported in your issue of December 24), and advising them to do some hard thinking on site organisation, mentioned that there was one man on the site who had to do just that every day of his working life. Mr. Broughton did admit that before the war site organisation was in the hands of the builder's agent or general foreman, but I can find no report that he made a good case as to why it should not be in the same hands to-day. Let the builder concentrate on feeding the job with all the plant and material it needs, and leave the organisation to the man whose job it was and should be now.

That is the cause of most of the trouble to-day; the man who should be given a free hand is tied more firmly than ever before. He is constantly being interfered with from above and below, yet he is the vital man in production.

Scientific advisers are beginning to discover things we knew years ago. One of Mr. Broughton's points was that operations should be related to convenient units of time such as a half- or a full-day, but does not tell us when to do the six-hour concreting job or what to do when rain upsets the programme. We know the answers and knew them before planners, advisers and researchers started to find out what our job is all about.

The time has surely come for builders and builders' foremen to get together and thrash out this matter of spheres of influence. After all, the builders are, rightly, trying to train new foremen and they should delegate to them their full responsibility.

F. H. GREGORY.
(Builder's Foreman).
31, Fairmead-road, N.19.

Victimisation of Property Owners.

TO THE EDITOR OF *The Builder*.

SIR,—Owners of controlled properties contribute to the upkeep of their tenants, as the following case, not an isolated one (there are thousands similar), will show:—

House with five rooms, scullery, double-bay windows, gardens front and rear. Close to train, bus and shops. London suburb.

Permitted number of persons to occupy the house (Housing Act, 1936):

Nine. Owner liable for ground rent, rates, repairs, etc. The rent has been controlled continuously since 1915. The tenant is liable for rent which represents less than the cost of four packets of 20 cigarettes weekly.

If nine persons occupy the house, 10 cigarettes each per week (not per day) would exceed the weekly rent for a brick-built slated house. Rates in 1948 were £12 19s.; in 1914, £4 10s. The water rate in 1948 was £1 8s.; in 1914, 9s. The rent paid by tenants includes 5s. 6d. weekly for rates and water. The services by Council and Water Board would appear to have justified an increase of about three times that of 1914.

Various Councils have increased rents in consequence of the increase in cost of repairs (at least three times that of 1939 and approaching four times). Considerable expenditure was involved in compiling measurements of houses for the purpose of the overcrowding section of Housing Act, 1936, when the permitted number was allocated, and this information could be used by local authorities as a basis for assessing rents of the houses in question.

Owners suffered during the war from losses of rent, war damage contribution, etc. In the case of a property-owning company, Excess Profits Tax of 100 per cent. up to 1945 and 60 per cent. to December, 1946, was levied, thus preventing the owner from recuperating his war losses.

In addition, railings and gates were taken by H.M. Government and, classified as scrap metal, brought in about 2s. 6d. per house. The cost to replace would be £20 or so.

SYDNEY A. NAYLOR.

The Manor, Davies-street, W.1.

OBITUARY

W. G. Newton, M.A., F.R.I.B.A.

We learn, as we go to press, of the death of Mr. William G. Newton, M.C., M.A., F.R.I.B.A., J.P. He was 64. The cremation will take place at Golders Green Crematorium on Saturday, January 15, at 10.15 a.m.

William J. M. Morrish, F.R.I.B.A.

We regret to record the death, on December 29, of Mr. William J. M. Morrish, F.R.I.B.A., of Gillingham, Dorset, at the age of 83.

John Hartree, J.P., F.R.I.B.A.

We regret to record the death, at the age of 79, of Mr. John Hartree, J.P., F.R.I.B.A., at his home, West Ways, Budleigh Salterton, on December 28. He was once diocesan architect to the Diocese of Hereford and designed many ecclesiastical buildings, including Aberystwyth Parish Church.

George Gordon MacFarlane, M.C.

We regret to record the death, in Capri, after a brief illness, of Mr. George Gordon MacFarlane, M.C., formerly of Glasgow. Elected A.R.I.B.A. in 1921 and F.R.I.B.A. in 1929, Mr. MacFarlane joined the firm of Watney Combe Reid and Co., Ltd., as the company's architect in July, 1925. He designed a number of properties in the Greater London area before he resigned, owing to ill-health, in 1929. Thereafter he resumed private practice, in the course of which he carried out several buildings for Messrs. Watney's. He was 63.

James Peter Orr, C.S.I., C.B.E.

We regret to record the death on January 8, at Canterbury Hospital, of Mr. James Peter Orr, C.S.I., C.B.E., late of the Indian Civil Service, of Ravenscroft, Cannongate-avenue, Hythe. He was 82.

He was for three years, from 1919, Director of Housing under the London County Council, after considerable experience in Bombay in the same field. He was chairman from 1909 to 1915 of the Bombay Improvement Trust and his views on rehousing were considered ahead of contemporary opinion on the subject in India. Between the wars Mr. Orr contributed to *The Builder* a half-yearly analysis of "The Greater London Housing Campaign."

W. Forbes Campbell, F.I.A.A. and S.

We regret to record the death of Mr. W. Forbes Campbell, F.I.A.A. and S., of Glasgow, as the result of a motor accident. He was the first president of the Incorporated Association of Architects and Surveyors, and was senior partner in a firm of architects and surveyors which specialised in the layout of football grounds and the design of sports stadia. He was shortly to have carried out an important commission in South Africa.

Charles Kerridge, F.I.O.B.

We regret to record the death, at the age of 72, of Mr. Charles Kerridge, F.I.O.B. He was governing director of Kerridge (Cambridge), Ltd. He was president of the National Federation of Building Trades Employers in 1940, and was once a governing director member of the Housing Improvement Association, hon. treasurer of the Export Group for Constructional Industries, and trustee of the staff pension fund of the Federation.

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CLAIMS UNDER THE PLANNING ACT

"DEAD-RIPE" LAND

OWNERS of land who have applied to the Minister of Town and Country Planning for a certificate, under Section 80, that their land is ripe for development, are advised to submit a "precautionary" claim on the £300 million fund to the Central Land Board before June 30, 1949, in case the certificate is not granted.

Only questions 1, 2, 3, 20(d), (and question 24, where relevant) of form S.1 need be filled in, and a copy of the completed answers to questions 1 to 4 of form L.R.D.1 (the application to the Minister) must be attached. If the application is refused, the S.1 will be returned, on notification to the Board by the claimant, for the remaining questions to be answered. The usual contribution towards fees will be payable provided the necessary conditions are fulfilled, including the completion of the optional part of the form.

There may be rare cases where an owner who is completing an L.R.D.1 form wishes to claim for development value in his land over and above that to which the application relates. Such an owner should complete and submit form S.1 in a normal manner, taking care to answer question 20(d).

CHARITABLE BODIES

The following advice to charitable bodies on submitting claims on the £300 million fund, and their right to professional fees, is given by the Central Land Board.

(1) *All land held by charitable bodies.*

In question 1 of the claim form S.1 the words "Land held on Charitable Trusts" should be inserted under "Business or Description."

(2) *Land for which a direction is sought under Section* 85(5).

Under Section 85(5) of the Act, trustees of Charity land can apply (before July 1, 1951) to the Minister of Town and Country Planning on a form C.T.L. for a direction that their "investment land" (i.e., land held as a source of revenue) should be treated as "functional" (i.e., used directly for the purposes of the charity). If such a direction is granted, development on the land for the purpose of the charity is not subject to a charge. In their pamphlet S.1A. the Board have already advised trustees to put in a precautionary claim before June 30, 1949, in respect of such land, in case the direction is not granted.

(a) As a further addition to the answer to question 1 of S.1, the words "a C.T.L. Form is being submitted" should be inserted.

(b) Only questions 1-3 (and question 23 or 24 where relevant) need be answered and the form signed.

(c) If the application to the Minister for a direction is later refused, the form will be returned, on notification to the Board by the claimant, for the remaining questions to be answered. The usual contribution towards fees will be payable provided the necessary conditions are fulfilled, including the completion of the optional part of form.

(d) The arrangements will only apply if the land which is the subject of the application is claimed for as a separate unit, and if the application to the Minister is submitted not later than March 31, 1950.

(3) *Land which is the subject of a reference to the Minister under Section* 92(1).

Under Section 92(1) of the Act any question whether land is land to which

Section 85 of the Act applies will be determined by the Minister.

If a claimant makes an application under Section 92(1) and also makes a precautionary claim (as he is advised to do in case the Minister's determination should not be made known before the time limit for claims); (a) as a further addition to question 1 of S.1 the words "subject to an application under Section 92(1)" should be added: (b), 2(b), (c) and (d) as above apply.

CAST-IRON PIPES

INQUIRY INTO CORROSION

THE Minister of Health has appointed a Departmental Committee to investigate the problem of corrosion in cast-iron water pipes. For some time evidence has been accumulating of the rapid external corrosion of cast-iron and spun-iron water pipes, especially those laid in clay subsoils containing sulphates. One result has been an unduly large number of bursts, and in some cases water mains have had to be replaced only ten years after being laid. This tendency to premature corrosion is of serious concern in view of the Government's programme for supplying piped water to rural areas. The Committee's terms of reference are: "To consider the extent to which there is evidence of early deterioration of cast- and spun-iron pipes, the causes of any such deterioration and the measures that should be taken to prevent it; and to report to the Minister."

The members of the Committee are:—

Lieut.-Colonel F. G. Hill, M.C., M.I.C.E. (Chairman), Ministry of Health; G. M. Binnie, M.A., M.I.C.E., Institution of Civil Engineers; J. C. O. Burns, B.A., M.I.C.E., Department of Health for Scotland; H. J. Escreet, B.Sc.(Eng.), M.I.C.E., M.Inst.Gas.E., Institution of Gas Engineers; Dr. J. C. Hudson, D.Sc., D.I.C., F.I.M., Iron and Steel Institute; British Iron and Steel Research Association; Dr. A. Key, D.Sc., Ph.D., Ministry of Health; R. W. Melvin, B.Sc., M.I.C.E., M.I.W.E., British Waterworks Association; E. Morgan, M.Sc., Cast Iron Pipes Association; Society of British Gas Industries; W. P. Rees, Department of Scientific and Industrial Research; C. A. Risbridger, B.Sc., M.I.C.E., British Waterworks Association; Dr. W. H. J. Vernon, O.B.E., D.Sc., Ph.D., F.R.I.C., Department of Scientific and Industrial Research; E. Wharton, F.R.I.C., Cast Iron Pipes Association; Society of British Gas Industries; L. C. Whiskin, M.I.C.E., Institution of Water Engineers; E. H. Williams, B.Sc., F.R.I.C., Ministry of Works; J. B. Windsor-Richards, Ministry of Supply; J. Noel Wood, M.C., M.I.C.E., Institution of Water Engineers.

The secretaries of the Committee are: C. H. Spens, M.I.C.E. (technical secretary), Ministry of Health; A. L. Vincent (administrative secretary), Ministry of Health.

CLAIMS FOR DEPRECIATION OF VALUES

IN Statutory Instrument 1948/2822, the Ministry of Town and Country Planning makes the following amendments to the Claims for Depreciation of Land Values (Period for Making Claims) Regulations, 1948:

In Regulation 4, the words "30th day of June" shall be substituted for the words "30th day of March."

In Regulation 10, the words "so however" to the end of the Regulation shall be deleted.

Regulation 11 is hereby revoked.

COMPARATIVE PRICES OF MATERIALS

	January, 1939.	*January*, 1948.	*January*, 1949.
	£ s. d.	£ s. d.	£ s. d.
Flettons	2 6 3	4 8 0	4 5 0
Blue wirecuts	7 4 0	15 14 6	16 7 6
Glazed bricks	24 0 0	46 0 0	49 0 0
Thames ballast	0 7 3	0 15 9	0 15 9
Pit sand	0 7 9	0 15 2	0 15 2
¾ in. Shingle	0 7 3	0 15 2	0 15 2
¼ in. Broken brick	0 11 3	0 17 6	0 17 6
Portland cement	2 2 0	3 9 6	3 11 6
Portland stone	0 4 5	0 4 10½	0 6 1½
Slates :			
24 in. x 12 in.	31 5 0	65 17 6	67 14 0
20 in. x 10 in.	20 15 0	42 10 0	44 12 6
16 in. x 10 in.	14 7 6	29 2 6	30 12 0
Tiles :			
Machine-made	4 2 6	9 5 0	9 14 6
Hand-made	4 17 6	11 0 0	11 11 0
R.S. joists	16 10 0	30 0 0	30 10 0
Sheet lead	23 0 0	109 10 0	141 10 0
Linseed oil	0 2 11	1 3 3	1 1 9
Ground English white lead	2 10 0	7 7 0	8 3 6
White lead paint	0 16 8	2 9 0	2 5 0
Red lead	1 18 0	6 12 6	7 18 9

LAW REPORT

CONTRACT CANCELLED UNDER PLANNING ACT

COURT OF APPEAL.

BEFORE THE MASTER OF THE ROLLS, LORD JUSTICE SOMERVELL AND JUSTICE WYNN PARRY.

Ransom and Luck, Ltd.
v.
The Mayor, etc., of Surbiton.

THIS was an appeal by the plaintiffs from an order of Mr. Justice Romer, sitting in the Chancery Division, on April 21, 1948, dismissing an action against the defendants.

The plaintiffs claimed damages from the defendants alleging that the defendants had broken a contract in May, 1939, in regard to the proposed development of an estate at Chessington, with the result that they suffered financial loss.

Mr. Justice Romer held that owing to the passing of the Town and Country Planning (Interim Development) Act, 1943, the defendants were not in a position to carry out their contract.

The appellants' case rested on an agreement made under the Town and Country Planning Act, 1932, and they contended that the respondents had no power to revoke that permission under the Act of 1943.

The appeal was dismissed, with costs.

The Master of the Rolls, in giving judgment, took the view that the appeal was a simple one. The respondents contended that they had the power to revoke any permit that had been given or cancel any agreements under the provisions of the 1943 Act. His lordship did not think that Parliament would tie the hands of a local authority in the way suggested by the appellants. Dealing with the Act of 1943, he expressed the opinion that the respondents were given power under it to act as they had done.

The other members of the Court concurred in the dismissal of the appeal.

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Fire Protection to Iraq Oil.

English-made steel and asbestos fire protection panelling, fitted by a Scottish firm of structural steel engineers, is being used to safeguard the nine pumping stations on the new 16 in. oil pipe line across Iraq. Some 40,000 sq. ft. of ¼ in. thick steel and asbestos panelling, made by Durasteel Roofs, Ltd., of Greenford, Middlesex, is now being erected in the form of fire barriers at the pumping stations. The panelling, together with the necessary steel framework, was first fitted up at Durasteel's Greenford factory, and then dismantled for export to Iraq, where Redpath Brown and Co., the Glasgow firm of structural steel engineers, are now reassembling it. At the Haifa end of the pipe line, 18 large "Durasteel" sliding doors have also been fitted to hangars at Haifa Airport for the Iraq Petroleum Co.

HOUSE VALUATION

PAPER READ AT R.I.C.S. MEETING

PART IV of the Local Government Act, which deals with the valuation of dwelling houses, was the subject of a paper read by MR. H. P. HOBBS, F.R.I.C.S., L.R.I.B.A., at a meeting of the Royal Institution of Chartered Surveyors, on January 3. Following is a brief summary of his remarks:—

A general re-valuation for rating purposes should have taken place in 1939, but before the valuation work had commenced the Central Valuation Committee found that the current valuation lists showed wide variations in the levels adopted for the valuation of houses. The Committee later reminded rating authorities of their duties under the Rating and Valuation Act of 1925, and in particular urged them to use the opportunity afforded by the re-valuation to ensure that all properties were assessed correctly under the terms of the Act. The Postponement Act of 1938 deferred the re-valuation until 1941, and a Departmental Committee under the chairmanship of Mr. Maurice Fitzgerald, K.C., was set up to inquire into the allegations. Following the outbreak of war, a second Postponement Act was passed which put off any prospect of a re-valuation until two years after the official end of the war. A Bill was eventually introduced during the autumn of 1947 and on March 27, 1948, it received Royal Assent as the Local Government Act.

Part IV of the Act lays down the principles by which dwelling-houses, with the sole exception of those to which Section 59 of the Pluralities Act of 1838 applies, are to be valued for the first and subsequent re-valuations under the Act.

For the next re-valuation and thenceforward, the older houses will be valued by reference to the 1939 rents of comparable houses, except where there is a lack of rental evidence, in which event the valuation has to be made by reference to values in 1938.

Houses built since 1918 will have their gross values estimated as follows:—

(i) If owned by a local authority—on the basis of 5 per cent. on the total of the hypothetical 1938 cost of construction and the hypothetical 1938 site cost.

(ii) If privately owned and within the compass of the Rent Restrictions Acts—5 per cent. on the total of the hypothetical 1938 cost of construction and the 1949 value of the site.

(iii) If privately owned and outside the Rent Restrictions Acts—by reference to 1939 rents of comparable houses, unless rental evidence is lacking, when a valuation will have to be made by reference to 1938 values.

It may be that the figures in the new Valuation Lists will show that the provisions of the 1948 Act have enabled fairness, equity and uniformity of valuation to be achieved at last, but many of us are more than a little doubtful. The four methods of valuation will not be easy to dovetail into each other; for instance, it may make a lot of difference if a modern house is at present assessed at £74 rateable value, or £76; rents in 1938 were not always the equivalent of 5 per cent. on the cost of the land and the building.

In conclusion, I would emphasise that to everyone the assessment finally fixed on his house at the next re-valuation is a matter of considerable importance. The gross values of shops, warehouses, factories, and other hereditaments will remain subject to amendment at any time, but dwelling-house assessments will remain unchanged.

With the sole exception of the small post-1918 dwelling house, where the site is valued as at 1949, the basis of valuation of houses has reference to a pre-war period and these values cannot alter. Accordingly, the gross value of a house once fixed will not change during succeeding re-valuations unless there have been structural or other alterations, or the 1948 Act itself is amended.

NEWS IN BRIEF

Registration Council's Report.

The Architects' Registration Council of the United Kingdom, 68, Portland-place, W.1, has published its annual report.

Calendars, 1949.

We acknowledge with thanks calendars for 1949 from the following: T. H. Smith and Son (Rugby), Ltd.; London Ballast Co., Ltd.; Jersey Contractors, Ltd.; and Durasteel Roofs, Ltd.

Licensing Officer's New Address.

As from January 10 the address of the Regional Licensing Officer, Ministry of Works, Bristol, has been 8-9, Elmdale-road, Bristol, 8. (Tel.: Bristol 22451.)

List of D.S.I.R. Publications.

"Government Publications Sectional List No. 3, Department of Scientific and Industrial Research" has been published by H.M. Stationery Office.

Reconstruction of Liverpool.

A first step towards the long-term reconstruction of the centre of Liverpool has been taken by Liverpool City Council, which has decided to start on the construction of the inner ring road.

Booklet on Fire Protection.

The Fire Protection Association has published a booklet entitled "Fire Protection Notes for Storage Buildings." Copies may be obtained free of charge by industrialists on application to the Association at 84, Queen-street, E.C.4.

New Appointments in T.D.A.

The Timber Development Association announce the following appointments:—Mr. B. Alwyn Jay, M.A. For. (Cantab.), F.L.S., deputy director; Mr. R. P. Woods, B.A. For. (Cantab.), scientific officer; Mr. R. T. Walters, A.R.I.B.A., A.M.I.Struct.E., chief architect; and Mr. F. D. Silvester, F.B.I.C.C., technical officer.

Timber Lectures.

Full details of lectures to be given throughout the country during January and February, under the auspices of the Timber Development Association, Ltd., may be obtained from the Association's education department at 75, Cannon-street, E.C.4.

Housing Scheme, Welwyn Garden City.

The Philip Flooring Company, 55, East End-road, Finchley, N.3, inform us that the living room floors of these houses (illustrated in our issue of December 31) were not laid in asphalt but in 1-in. t. and g. Columbian pine block flooring, laid by their company. The architects were Messrs. Louis de Soissons, A.R.A., and Partners.

Industrial Management Survey.

"A Short Survey of Industrial Management" has been published by the British Institute of Management, 17, Hill-street, W.1, at 2s. 6d. This book by Mr. L. Urwick is the first in a series of publications dealing with management. It does not necessarily represent the official views of the Institute. The author points out the amount of work to be done, and expresses the hope that more attention will be paid to management principles in Great Britain in the future.

Pavilioned in Splendour.

A pavilion based on eighteenth-century Roman Doric style will be constructed with modern methods and materials to house the "Beautiful Things" section at this year's Ideal Home Exhibition at Olympia. Homes exhibited by the Ministry of Health will include a three-storey family house, with four bedrooms and a bathroom upstairs and a roof-terrace and ground-level garden for recreation. A two-storey maisonette, a two-room flat and a single-room flat will also be shown, together with four houses by individual building concerns. The Exhibition will be open from 9.30 a.m. to 9.30 p.m. every week-day from March 1 to March 26

TRADE NEWS

Change of Address.

The new telephone number of Messrs. Kwikform Ltd., who have moved to 194, Waterloo-road, Birmingham, 25, is Acocks Green 1152/3/4.

Fixing Standard Metal Windows.

Catalogue 124, issued by the Crittall Manufacturing Co., Ltd., Braintree, Essex, is entitled "Fixing Crittall Standard Windows," and deals with the methods of fixing to normal types of building construction. The products referred to are: standard metal windows fixed in 11-in. cavity walls; standard metal windows fixed in 9 in. rendered brick walls; standard metal windows in wood surrounds to 11 in. cavity walls; Crittall standard pressed steel cills and sub-frames.

New Test for Concrete Workability.

The Wigmore Consistometer, a machine designed to determine the workability of concrete on the site is being manufactured by Messrs. A. Macklow-Smith, Ltd. It comprises a stand about 3 ft. high, supporting a vibrating platform operated by a handle at the side of the stand. Underneath the platform, protected from the elements, is a counter which records the consistency factor. On the platform is a portable container (one-third cu. ft. capacity for standard model) through which a steel rod, with bronze ball attached, moves vertically. The rod is centralised by a guide cap which slides on the rod and fits over the rim of the hole in the cover. The test for workability can be performed by one man.

CODES OF PRACTICE

Loadbearing Walls (Structural).

THE Codes of Practice Committee has now published in final form Code 111 "Structural recommendations for loadbearing walls." It was previously issued as a draft for comment, and has been revised in the light of comments received by a committee convened by the Institution of Structural Engineers on behalf of the Codes of Practice Committee.

The Code is one of a group on loadbearing superstructure and a companion document to Code 112, "Structural use of timber in building" (already issued for comment); Code 113, "Structural use of steel in building" (already published following revision of draft for comment); and Code 114, "Structural use of normal reinforced concrete in building" (already published following revision of draft for comment).

Included in the document are the following sub-codes:—111.101, "Masonry including brickwork (unreinforced)"; 111.102, "Masonry including brickwork (reinforced)"; 111.201, "Concrete cast *in situ*."

The main Code gives structural recommendations relating to loadbearing walls of masonry (which, for the purposes of this Code, includes brickwork) and cast *in situ* concrete. Recommendations are made regarding materials to be used, maximum permissible stresses and methods of design and construction. In recent years, the necessary thickness of a wall has been determined by relating it to either the height and length of the wall, or the load to be carried by the wall, in conjunction with certain specified permissible stresses. This Code deals with the design of walls based on the second method only.

Terms used are defined and extensive information is given on the quality of materials. Guidance is afforded on such design considerations as loading; wall thicknesses; lateral support; modifications of effective thickness, due to intersecting walls and piers; and cavity walls.

Methods of determining the compressive strength of structural units and the water absorption of bricks, strength tests for alternative materials and methods of construction, and the requirements to which hydraulic and quick-hardening limes should conform are described in appendices. The three sub-codes deal similarly with loadbearing walls of the types indicated by their titles, either by reference to the relevant clauses of the main Code, or by detailed recommendations on matters peculiar to the type of wall concerned. Copies may be obtained from the B.S.I., 24/28, Victoria-street, S.W.1, price 5s., post free, reference C.P.111 (1948).

Electricity Supply for Flats.

The Codes of Practice Committee has published in final form Code 322.102, "Electricity Supply intake arrangements for flats and other multi-occupier buildings." The Code was previously issued as a draft for comment and was convened by the Institution of Electrical Engineers.

The Code deals principally with the installation of rising and lateral electricity conductors in buildings of the kind specified; it indicates the provisions necessary to ensure adequate electricity supplies to individual consumers. It is not applicable to industrial premises.

The definitions given in B.S. 205, "Glossary of terms used in electrical engineering," have been observed throughout, and additional terms not covered by the B.S. are defined. A list of relevant British Standards is also included. Attention is drawn to the alternative methods of supply, from an external system of medium-voltage mains or a transformer sub-station external to the building, or a transformer installed in a sub-station within the building. Details of arrangements for both methods are set out, and the equipment specified.

Particular attention is given to the location, design and equipment of switch and meter rooms where the supply is derived from a transformer sub-station installed within a building. The Code makes recommendations on the sizes and type of finish of vertical ducts or chases required for rising conductors, and specifies the various types of systems available to which rising electricity conductors should conform. Advice is given on the choice of such systems and the sizes of conductors to be installed. The Code also includes information of the general design and arrangement of floor distribution boards, and describes types of lateral conductors between floor distribution boards and consumer's supply controls.

The Code carries the usual warning that during the present abnormal conditions it may not be practicable to take full advantage of all the recommendations in the Code. Copies may be obtained from the B.S.I., 24-28, Victoria-street, S.W.1, price 2s., reference CP 322.102 (1948).

Water Supply.

The Codes of Practice Committee has now issued a draft for comment, Code 310, "Water Supply," prepared by committees convened by the Institution of Water Engineers. It deals with the supply of water to houses, schools, hospitals and public buildings, and has been divided into five parts; public supply, private supplies, conveyance, storage, and utilisation.

Copies may be obtained from the B.S.I., 24-28, Victoria-street, S.W.1, price 6s., proof reference C.P.(B)809.

THE SCOTTISH BUILDER

NEW BUILDINGS

Glasgow.—Additions and alterations, etc., for Alexander Milne & Son are to be constructed at Rhymer-st., for which the architects are Alexander Hyslop & Campbell, United Kingdom Provident Institution-bldgs., St. Vincent-st., Glasgow.

Glasgow.—At Holm-st. site new office buildings to be erected for the South-West of Scotland Electricity Board.

Kilmarnock.—Suite of 5 shops and other accommodation to be erected on Altenhill site, for which the architects are James Hay & Steele, 55, West George-st., Kilmarnock.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JANUARY 20.

***Gloucester R.D.C.**—12 houses at Whitminster. C. D. Carus-Wilson, M.C. (F.), Hardwicke, Glos. Dep. £3 3s.

JANUARY 21.

†***Coalville U.D.C.**—Conversion of Bakewell-st. dispensary into 3 flats. E. & S. Dep. £3 3s.

†***Isle of Ely C.C.**—Conversion of Old Boys' School, Thorney, into 2 dwelling houses. R. D. Robson (A.), County A., March, Cambs. Dep. £2 2s.

†***Merton and Morden U.D.C.**—Blocks of 20 flats (contract No. 13) at junction of Martinway and Westcroft-gdns., and 16 flats (contract No. 36) at junction of Grand-dr. and Cannon Hill-la. H. May, C., Morden Hall, S.W.19. Dep. £3 3s. each contract. Tenders by February 15.

JANUARY 22.

***Esher U.D.C.**—40 dwellings at Northfield Farm, Cobham. E. & S., Council Offices. Dep. £1 1s.

†***Essex C.C.**—Erection of Infants' Dept. at Canvey Island Long-rd., School (approx. cost, £33,500). H. Conolly (F.), County A., County Hall, Chelmsford.

Llandilo R.D.C.—Six houses at Broad Oak, Llangathen. E. & S., Council Offices, Crescent-rd. Dep. £2 2s.

†***Oundle and Thrapston R.D.C.**—(a) 10 houses at Woodnewton; (b) 6 houses at Ringstead; (c) roads and sewers, etc., at 6 parishes. C., Council Offices, Midland-rd., Thrapston. Dep. £2 2s.

JANUARY 24.

***Congleton T.C.**—27 houses at Rood Hill estate, contract No. 3. C. Brown, M.I.Mun.E. (A.), B.E. & S., Town Hall. Dep. £2 2s.

†***Coventry E.C.**—Additional classroom accommodation at various schools. Director of E., Council House. Dep. £2 2s.

†***Northumberland C.C.**—Four houses at Divisional Police Headquarters, Morpeth. County A., County Hall, Newcastle-upon-Tyne 1. Dep. £2 2s.

Tavistock R.D.C.—Six houses at Peter Tavy. Vanstone & Partners, Architects, National Provincial Bank-chbrs. Dep. £3 3s.

JANUARY 26.

†***Eton R.D.C.**—(a) 44 houses at Burnham; (b) 44 houses and 1 block of 4 flats and 1 pair of Duplex houses at Datchet. G. L. Bridger, C., Council Offices, Windsor-rd., Slough.

†***Hythe T.C.**—Five pairs of houses at Springla. B.S. Dep. £2 2s.

†***Norfolk E.C.**—Alterations, etc., at Attleborough County Primary School. W. O. Bell, Chief Education Officer, Ed. Offices, Staceyrd., Norwich. Dep. £2.

JANUARY 29.

***Stepney B.C.**—War damage repairs to various properties. Chief Technical Officer for War Damage, 191-193, Commercial-rd., E.1. Dep £2 2s.

JANUARY 31.

***Barking T.C.**—18 flats, London-rd. Boro' Architect. (Above date is for return of applications.)

***Halifax C.B.**—Work in reinforced concrete for erection of workshop and laboratory at Tech-

nical College Annexe, Hopwood-la. B.E. Dep. £2 2s.

*Wimbledon B.C.—War damage dilapidations and sundry alterations at Nos. 66 and 70, Hartfield-rd. B.E. & S., Town Hall. Dep. £2 2s.

FEBRUARY 3.

Petersfield R.D.C.—One block of 8 flats and 1 block of 4 houses at Malthouse estate, Bramshott. C., Old College. Dep. £2 2s.

FEBRUARY 4.

Sturminster R.D.C.—Block of 13 aged persons' dwellings and warden's block, Stalbridge; 4 houses at Ibberton; 6 at Manston; 8 houses and road works, etc., at Okeford Fitzpaine and 2 houses at Hazlebury Bryan. J. S. Nevill, quantity surveyor, Tregarnhen House, 24, West-st., Wimborne. Dep. £2 2s.

FEBRUARY 7.

Baldock U.D.C.—17 houses at Weston-way estate. C., Council Offices. Dep. £2 2s.

*Barnstaple T.C.—30 houses at Forches estate. B.S., The Castle. Dep. £2 2s.

Newmarket U.D.C.—44 houses at Heath Lodge. H. G. Kenyon, architect, Council Offices, Severals House. Dep. £3 3s.

*Norfolk C.C.—Three police houses at Bexwell-rd., Downham Market. County A., 25, Thorpe-rd., Norwich.

FEBRUARY 10.

Burton-on-Trent C.B.—First instalment of Hillside Secondary Modern School. B.E. & S., Town Hall. Dep. £3 3s. (extended date).

*Derby C.B.—94 houses in 4 contracts at Chaddesden Hall estate. T. W. East (F.), Boro' A. Dep. £2 2s.

†*Kingston-upon-Thames T.C.—24 flats at Maple-rd., Surbiton. Dep. £2 2s. Tenders by March 7.

Stafford T.C.—66 houses at Rising Brook estate. B.E. & S., Mount-st. Dep. £2 2s.

FEBRUARY 12.

*Bournemouth C.B.—Public convenience at "Pelhams," Kinson. Boro' A., Room 51, Town Hall. Dep. £1 1s.

FEBRUARY 19.

*Harrow U.D.C.—76 flats at Whittington-way. E. & S., Council Offices, Harrow Weald Lodge. Dep. £2 2s.

FEBRUARY 23.

*Southampton C.B.—War damage repairs, maintenance, etc., to gymnasium block at Itchen Secondary School. Boro' A., Civic Centre. Dep. £2.

NO DATE.

*Tunbridge Wells T.C.—40 flats at Ramslye housing estate. Hugh P. Bishop, B.S. and Water E., Town Hall. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

JANUARY 22.

*Essex C.C.—External painting and internal renovations and general repairs and W.D. repairs at Wanstead House Community Centre, George Green (est. cost, £1,295). H. Conolly (F.), County A., County Hall, Chelmsford.

JANUARY 25.

Fareham U.D.C.—E. & S. (Materials).

JANUARY 28.

Matlock U.D.C.—E. & S. (Materials).

JANUARY 29.

Bootle C.B.—B.E. & S. (Materials).
Monmouthshire C.C.—C. (Materials).

JANUARY 31.

Formby U.D.C.—E. & S. (Materials).
Lincoln (Parts of Lindsey) C.C.—County S. (Materials).

FEBRUARY 2.

Gosport B.C.—B.E. (Materials).

FEBRUARY 3.

Leeds T.C.—Highways E. (Materials).

FEBRUARY 4.

Staffs C.C.—County S. (Materials).

FEBRUARY 5.

*Coulsdon.—External painting hospital for South-West Metropolitan Regional Hospital Board, Netherne Hospital Management Committee Group. K. W. Faulk, Secretary. Dep. £2 2s.

*Huyton-with-Roby U.D.C.—E. & S. (Materials).
Rainford U.D.C.—S. (Materials).
Southend-on-Sea C.B.—B.E. (Materials).

FEBRUARY 9.

Crompton U.D.C.—E. & S. (Materials).
Stevenage U.D.C.—E & S. (Materials).

ROADS, SEWERAGE AND WATER WORKS

JANUARY 26.

Wanstead and Woodford B.C.—Improvement of George-la. and making-up The Shrubberies, S. Woodford. B.E. & S. Dep. £5.

JANUARY 28.

†Havant and Waterloo U.D.C.—Construction of Purbrook relief sewer. Howard Humphreys & Sons, 17, Victoria-st., S.W.1. Dep. £3 3s.

Rugby R.D.C.—Road and sewer works, etc., Clifton-upon-Dunsmore site. S., 24, Warwick-st. Dep. £2 2s.

JANUARY 31.

Sevenoaks R.D.C.—Completion of road works at various sites. E., "Inglewood," Oak Hill-rd. Dep. £2 2s.

†Ware R.D.C.—1,970 yds. of 6-in. stoneware pipe sewers, etc. D. Balfour & Sons, 151, Victoria-st., S.W.1. Dep. £5.

FEBRUARY 7.

Rawmarsh U.D.C.—Making-up Wheatcroft-rd. and Evelyn-st. E. & S., Council Offices, Parkgate, Yorks. Dep. £5.

FEBRUARY 8.

Rugby T.C.—Roads and sewers at Newbold Glebe estate, contract No. 1. B.E. & S., Burford House. Dep. £2 2s.

FEBRUARY 9.

*Carmarthen R.D.C.—Contracts Nos. 1, 2 and 3, including supplying, laying and jointing spun-iron water mains for western area water supply scheme. G. G. Thomas, E. Dep. £7 7s.

FEBRUARY 12.

Aireborough U.D.C.—Making-up Hawthorn-dr. E. & S. Dep. £2 2s.

GENERAL BUILDING WORK

(LONDON)

Pall Mall.—REBUILDING.—New Zealand Govt. have purchased leases of Carlton Hotel, His Majesty's Theatre, and the Royal Opera Arcade in preparation for construction of a New Zealand House. No architect appointed yet.

Strand.—REPAIRS.—Arcon, chartered architects, 81, Piccadilly, W.1, have obtained civil building licence to renovate Gatti's Restaurant.

Woolwich.—HOUSING.—B.C. to acquire land at 7-19 (odd), Jackson-st. for housing purposes.

Woolwich.—HOUSING.—B.C. to purchase land at 33, Pendrell-st. for housing purposes.

Woolwich.—HOUSING.—B.C. to purchase 1-2, Kent-cottages and land at Dock-st. for housing purposes.

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AGS

(PROVINCIAL)

Ashbourne.—U.D.C. received allocation of 40 houses for 1949.

Atherton.—U.D.C. propose swimming baths and dressing-rooms. Plans by J. C. Prestwich & Sons (F. & A.), Bradshawgate-chbrs., Leigh.

Bakewell.—R.D.C. propose 50 houses at Eyam, Birchover, Chelmorton, etc. 10 by private enterprise.

Belper.—R.D.C. allocated 100 houses.

Birmingham.—Holbrooks, Ltd., Ashted-row, propose factory at Aston Cross. L. E. Harper (F.), 191, Corporation-st.

Blackburn.—Directors of Blackburn Trustee Savings Bank, Lord-st. West, propose branch banks at Great Harwood and Haslindon.

Bolton.—T.C. propose development of 14-acre site at Bannister Close Farm, Folds-la., for housing estate.

Bridlington.—Yorkshire Equipment Co., propose works at Industrial Trading Estate. W. S. Cook, architect, The White House, Belvedere.

Brierley Hill.—U.D.C. propose 305 houses at 7 sites for 1949.

Brighouse.—T.C. propose omnibus station and borough market. T.C. received consent of M.H. to borrow £17,206 for 14 houses at Brackenrd. Allocation of 30 houses at Cain-la. estate, Southowram, and Deep-la. site. J. Blakeborough & Sons, Ltd., Woodhouse Works, propose 6 houses for key workers.

Burnley.—T.C. propose 20 police houses.

Bury.—T.C. propose 360 houses; received allocation of 90 houses.

Carnforth.—U.D.C. propose development of 30 acres off Highfield-ter. for housing.

Chadderton.—U.D.C. propose housing at Northfield-rd.

Chapel-en-le-Frith.—G. & T. Earle, Ltd., cement manufacturers, Wilmington, Hull, received approval of plans for extensions to Hope Cement Works.

Chester.—Trustees of Blacon United Free Church propose church at Blacon

Chesterfield.—J. W. Thompson (Chesterfield), Ltd., Old Whittington Bakeries, propose modern bakery at Four-la. Ends, Upper Newbold. Derham, McKeith & Partners (L.), Empress-bldgs., Church-st., Blackpool. R.D.C. propose development of 6-acre site for housing at Birley Moor-rd., Frecheville.

Colwyn Bay.—T.C. propose sports stadium at £60,500.

Coventry.—T.C. propose branch library at Canley; swimming baths and public wash-house at Primrose-hill Park; residential nursery at Humphrey Burton-rd.; day nursery at Monk's Park estate, Holbrooks, at £17,000. Housing cttee. approved plan for 2-storey flats to be erected on various sites. Plans to be prepared for 300-400 houses at Manor Farm, Bell Green.

Criccieth.—U.D.C. propose scheme for sea defence works at Esplanade and Abereisteed.

Dewsbury.—T.C. propose child welfare centre at Bricknell-ave. estate.

Didsbury.—British Electricity Authority propose additional office block at north-western divisional headquarters at British Electricity House, Wilmslow-rd., at £50,000. H. S. Fairhurst & Son (F.), Chancery-chbrs., 55, Brown-st., Manchester 2.

Doncaster.—T.C. received approval of M.H. for 40 houses at Sandringham-rd. and Greenfield-la. at £47,888.

Drayton.—R.D.C. propose 16 houses at Hodnet and 12 at Cheswardine.

Gainsborough.—U.D.C. propose 48 houses and 12 by private builders.

Garstang.—R.D.C. to apply to M.H. for permission to erect 90 houses at Calder Vale, Great Eccleston, Stalmine, Bilsborrow and Inskip, 18 by private enterprise.

Golborne.—U.D.C. seek sanction of M.H. to borrow £68,500 for 52 houses at Derby-rd. U.D.C. propose 10 houses by private enterprise.

Halifax.—Card Clothing and Belting, Ltd., West-gr. Mill, propose extensions to Oak Bank Tannery, Northallerton.

Hawarden.—Ewloe and District Conservative Club propose premises at Penariag. R.D.C. propose swimming baths at Shotton area.

Hollingworth.—Ches E.C. propose alterations to council sch. for conversion to a county sec. (mod.) sch. for Longendale area.

Hyde.—Members of British Legion propose legion hall at Cross-st. and Water-st. at £10,000.

Keighley.—T.C. approved 26 houses, Carr-la., Riddlesden, for S. E. Procter; houses, Greenhead-rd., Utley, for L. Rushton; factory, Lime-st., for Itduz, Ltd.

Kendal.—Lancs. C.C. preparing working drawings for conversion of Sedgwick House into sch. for epileptic children.

Lancaster.—Governors of The Friends' Independent Grammar Sch. propose extensions at £8,000.

Lichfield.—R.D.C. allocated 150 houses.

Lincoln.—T.C. propose prim. sch. at Boultham.

Liverpool.—T.C. propose extensions at Woolton-vale Remand Home.

Lymm.—U.D.C. propose 25 houses at Rush Green site.

Manchester.—T.C. approved:—Factory, Collyhurst-rd., Collyhurst, for J. Wilcox & Son, E. C. Costello, architect, 325, Langworthy-rd., Pendleton, Salford 7; branch headquarters, Victory-ave., Blackley, for British Legion Building Cttee., Brameld & Smith, architects, 286, Corn Exchange-bldgs., Fennel-st.

Mostyn.—Flints E.C. propose prim. sch.

Nantwich.—U.D.C approved 48 houses, 7 shops and 2 police houses at The Mount, Crewe-rd.

Newcastle (Staffs).—T.C. approved: S.D. houses, Kingsway East and Chester-cres., *or Wainwright & Thomas, W. Campbell & Son, architects, 6, Pall Mall, Hanley, Stoke-on-Trent; alterations, 82, High-st., Boots Pure Drug Co., Ltd., Station-rd., Nottingham. Potteries Motor Traction Co., Ltd., propose reconstruction of Hassall-st. omnibus station. T.C. propose 42 houses and 8 maisonettes, Bradwell estate; 56 houses and 24 maisonettes on Knype-ave., Clayton-rd. sites. E.C. propose schs. at Bradwell Wood estate.

Ormskirk.—U.D.C. propose 250 houses and 50 by private builders, Richmond-ave. estate, Burscough and Scott estate.

Otley.—U.D.C. approved houses, East Busk-rd., for E. S. Rhodes, 14, Boroughgate.

Poynton.—Ches E.C. propose kitchen and equipment for school meals at £7,720.

Prestwich.—Lancs E.C. propose kitchen for schools at Ostrich-la.

Pwllheli.—T.C. approved development of the Gimblet Quarry, Pwllheli Granite Co., Ltd.

Rochdale.—T.C. approved extensions, Harp Mill, Castleton, for Lancs Cotton Corp., Ltd., Blackfriars House, Parsonage, Manchester 3. T.C. propose 200 houses at Kirkholt estate.

Scarborough.—M.H. approved T.C.'s plans for 32 houses at Cayton-Seamer site.—Plans have been approved for the erection of a factory off Mount View Avenue for Coastal Food Recovery, Ltd.

Seaham.—Disabled Persons Employment Corporation considering factory to employ disabled people.

Sedgefield.—R.D.C. to build 60 houses.

Sheffield.—T.C. approved:—Office block, Alsing-rd., Millspaugh, Ltd.; additions to works, Worthing-rd., Attercliffe, for Coleridge Engineering Co., Ltd., T.C. propose children's home and nursery unit at The Moss, Limb-la., Dore.

Shrewsbury.—E.C. propose wing to County Domestic Science Training College. Willink & Dod (F.), Cunard-bldg., Pierhead, Liverpool 3.

Skelmersdale.—U.D.C. to apply to M.H. for sanction to borrow £55,388 for 48 houses, Windrow's Farm site.

Smethwick.—T.C. received allocation of 30 houses.

South Kesteven.—R.D.C. propose 62 houses.

South Shields.—T.C.'s housing allocation this year is 600. It is proposed to build 180 houses at Lizard-la. and 126 at Grosvenor-rd., Northfield-gdns. and Bamburgh and Marsden-rd.

South Shields.—Post Office to build £14,000 temp. sorting office at Waterloo-vale.

South Shields.—C. S. Errington, Grainger-st., Newcastle-on-Tyne, prepared plans for disabled workers' factory at Bede estate for North-Eastern Trading Estates, Ltd., Low Fell, Gateshead.

Spennymoor.—U.D.C. allocated 150 houses for 1949.

Stockport.—Stockport & District Trustee Savings Bank, 43, Lower Hillgate, propose branch bank at Poynton. E.C. propose prim. sch. at Banks-la. Cruickshank & Seward (F.), 16, Princess-st. Regional Hospitals Management Committee propose extensions at Maternity Home.

Tarporley.—Victory Hall Cttee. propose victory hall at recreation ground.

Tottington.—Lancs E.C. propose sec. sch. for 300 pupils at £121,506.

Towcester.—R.D.C. allocated 48 houses and 12 by private builders on 7 sites.

Warrington.—T.C. approved:—Additions to factory, Norman-st., Alliance Box Co., Ltd.; laboratory to Dallam Brewery, Dallam-la., Peter Walker (Warrington), Ltd.

Wellington (Salop).—R.D.C. received allocation of 40 houses.

West Hartlepool.—T.C. to build 200 houses and 50 houses allocated to private enterprise. Boro. A., S. M. Richmond.

Wrexham.—Denbighshire E.C. propose extensions to technical coll. at £60,000. G. D. Wiles (L.) County Offices, Church House. Catholic Authorities propose Catholic sec. sch.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government departments*.

Airdrie.—Alterations and additions at St. Margaret's Catholic School, for Lanarkshire C.C. William Watt, architect, Albert-st., Motherwell: *Myton, Tarran Industries, Ltd., Mossend, Bellshill.

Barnard Castle.—38 houses for R.D.C.: *R. C. Williamson, Ltd., Rowlands Gill Co., Durham.

Bellingham.—20 houses at West Woodburn, for R.D.C.: *Haverys (Contractors), Ltd., Milburn House, Newcastle-on-Tyne.

Blackwell R.D.C.—Houses for R.D.C. Architect and Housing Supt., "Dale-close," 100, Chesterfield-rd. South, Mansfield, Notts. Quantities by Gleeds, Nottingham. 18 off Rowthorne-la., Glapwell, Derbys: *H. Ashley & Son, Ltd., Church-hill, Mansfield Woodhouse. 10 at Wire-la., Newton, and 6 at Alfreton-rd., Blackwell: *W. Plowman & Co., Ltd., Huthwaite. 16 at The Maltings, Langwith: *C. A. Warden, 21, Derby-rd., Annesley, Notts.

Birkenhead.—20 houses at Mount-rd. and Storeton-rd., for T.C. B. Robinson, M.I.Mun.E., B.E., Town Hall: *Lloyd & Cross, Ltd., 68, Argyle-st., Birkenhead, £24,765.

Birmingham.—Extensions at Witton Works, for G.E.C.: *W. J. Whittall & Son, Ltd., 132, Lancaster-rd., Birmingham 4.

Blackpool.—Six shops, flats and garages at Grange Park estate, for C.B. B.S.: *Clifton Constructions (Blackpool), Ltd., Clifton-rd., Marton, Blackpool, £23,526.

Brentford and Chiswick.—60 flats (Scheme No. 2) at Edensor-gdns., for T.C.:—

Sheppard & Short, Sudbury	£122,102
Amalgamated Building Contractors, Ltd., S.W.1	116,754
F. Troy & Co., Ltd., S.E.1	114,000
C.Bryant & Son, Ltd., Birmingham 1 ...	106,745
Stone & Co. (London), Ltd., Croydon ...	106,742
G. T. Crouch, Ltd., Kingston	106,735
Geo. Moss & Sons, Ltd., Southall ...	106,479
Francis Jackson (Contractors), Ltd., Ickenham	105,873
J. Gerrard & Sons, Ltd., W.C.1	104,423
L. & M. Construction Co., Ltd., Harrow	103,610
James Crosby & Sons, Ltd., Chertsey	103,561
Unera Construction Co., Ltd., W.14 ...	103,249
Kirk & Kirk, Ltd., S.W.15	102,000
Perrys (Ealing), Ltd., W.5	100,950
N. Sinclair, Ltd., W.13	99,785
Jos. Cartwright, Ltd., S.W.4	99,450
H. J. Walker & Sons, Bristol	98,544
G. H. Wright, Ltd., W.C.1	98,189
Gorham (Contractors), Ltd., Worthing	96,837
‡Geo. Wimpey & Co., Ltd., Tilehouse-la., Denham, Uxbridge	96,816

Brighouse.—20 houses at Stoney-la. estate, for T.C. H. A. Sneezum, A.M.I.C.E., B.S., Municipal Offices, Commercial-st.: *J. Jagger & Sons, Ltd., Bailiffe Bridge, Brighouse, £21,000.

Carmarthen.—Houses for R.D.C. E. G. Thomas, E. & S., 3, Spilman-st. 10 at Cefenithin: *D. Glyndy Griffiths, "Rosamunde," Trimsaran, Kidwelly; four at Talog: *W. E. Jones, 24, Water-st., Carmarthen.

Chertsey.—Three houses off Shakespeare-rd., Addlestone, for U.D.C. W. V. Davies, E. & S.: "Challenge Fencing & Construction Co., 120, Tartar-rd., Cobham, £3,445.

Coatbridge.—Two blocks of six classrooms each at Townhead site, for Lanarkshire C.C. William Watt, architect, Albert-st., Motherwell:—Formation of raft, bottoming, etc.: Mayco, Ltd., Glasgow. Construction, etc., of classrooms: The Bristol Aeroplane Co. (Housing), Ltd. Drainage, etc., works, Loudon & Inglis, Coatbridge. Plumbing and sanitary engineering works, etc.: Lanarkshire Direct Labour, Motherwell. Electric lighting and heating, etc.: E. J. Stiele & Co., Coatbridge. Special floors, etc.: Oswald Toffolo & Co., Glasgow. Granolithic floors, etc.: McCartney & Reid, Ltd., Wishaw. Sanitary fittings, etc.: John Glendinning & Sons, Glasgow. Electric tubular heating, etc.: General Electric Co., Glasgow.

(Cost over £41,000.)

Cookham.—Six houses near Hurley Village, for R.D.C. James H. Beevis, M.Inst.R.A., Architect & S.: *A. C. Fuller, "Hazell," Havelock-cres., Maidenhead, Berks, £7,869.

Cumberland.—Dining-room and kitchen at St. Paul's School, Frizington: *J. T. Twiname, Ltd., Hill Crest, Brigham, Cockermouth.

Cumberland.—Extensions and adaptations to D.P.E.C. premises at Cleator Moor: *Gow & Watson, 40, Cronfield-rd., Cleator Moor.

Eastbourne.—68 houses at Chatfield/Davis estate, section 11, for C.B. R. Williams, B.Sc., A.M.Inst.C.E., B.E. & Building S., 2 & 4, Saffrons-rd.: *Y. J. Lovell & Son, Ltd., 10, Gildredge-rd., Eastbourne, £86,844.

Elham.—Four pairs of Airey houses at Newrd., Saltwood, for R.D.C. C., Council Offices, Lyminge:—

R. J. Barwick, Dover...	£12,202
Hayward & Paramor, Folkestone ...	11,951
S. J. Sharp & Son, Ltd., Hythe, Kent...	11,852
E. Charlier & Sons, Ltd., Hythe, Kent...	11,689
A. D. Castle, Folkestone	11,439
*C. V. Buchan & Co., Ltd., Dover	10,823
J. B. Rose & Co., Ltd., Folkestone ...	10,680

Hull.—26 bungalows for aged people at Bricknell-av., for T.C. A. Rankine (A.), City A., Guildhall: *J. Mather & Sons, 15, de Grey-st., Hull, £29,400.

Jarrow.—50 Newland type houses, for T.C. B.E.: *Myton, Ltd., £65,755.

Liverpool.—Construction of two-storey transit sheds at Canada Dock, for Mersey Docks and Harbour Board, Engineer's Offices, Pierhead: *A. McIntyre & Son, Ltd., 22a, Stanhope-st., Liverpool 1.

London.—Erection of new building at 151-165, Shaftesbury-av., and 13-25, New Compton-st., Holborn. Arthur S. Ash (F.), architect, 66, Gt. Cumberland-pl., London, W.1: *Harry Neal, Ltd., 117, Baker-st., London, W.1.

L.C.C.—Contracts exceeding £2,500 in value placed by L.C.C. during period ended January 6:—Repairs after war damage at Vernon-sq. School, Finsbury, W. W. Rowney & Co., Ltd., S.E.1. Conversion of classrooms, etc., for meals service at Hugh Myddelton School, Finsbury, R. J. Truscott, Ltd., Leyton. Erection of two blocks of dwellings, a laundry, clubroom and children's playground and 16 perambulator sheds at Lindley estate, Camberwell, Tersons, Ltd., E.C.1. Repairs after occupational and war damage at Heathbrook School, Clapham, Hunter & Clark, Ltd., Wandsworth. Adaptation work and the erection of temporary accommodation, etc., at King's Warren (Girls') Secondary School, Woolwich, Harry Kent (Builders), Ltd., Lewisham.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended January 8.

Painting work: Clark & Fenn, Ltd., London, S.W.4. *General maintenance work:* M. J. Gleeson, Ltd., North Cheam, Surrey; Pochins (Contractors), Ltd., Middlewich, Ches; A. Ingham & Son (Builders), Ltd., St. Annes-on-Sea; F. Parkinson & Son, Ltd., Blackpool. *Erection of hutting:* John Spafford, Ltd., Scunthorpe, Lincs.

¶London (M.O.W.).—Contracts placed by M.O.W. during week ended December 25:—

London: M.N.I., 215-217, High-st., Lewisham. Occupational services, Rice & Son, Ltd., 15, Stockwell-rd., S.W.9; Pit Lights, Greenhouses and Frame Ground, Hyde Park. Repairs and painting, John Greenwood, Ltd., King William-st. House, Arthur-st., E.C.4; Braintree School, Warren-rd., N.W.2, Kitchen and dining-room, F. & C. Costain (1948), Ltd., Kenton-rd., Kenton, Middx; Bermondsey, Telephone manager's office, Geo. Parker & Sons, Ltd., 124, Sumner-rd., Peckham, S.E.15. *Angus:* Muirhead of Liff School, Temporary classrooms, Bett Bros., 9, Cox-st.,

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Dundee, Angus. *Beds*: A.N.E., Bedford,, Testing machine building, Geo. Wimpey & Co., Ltd., Hammersmith-gr., W.6. *Northumberland*: Tynemouth High School, School meals accommodation, Constables (Newcastle), Ltd., Groat House, Newcastle-on-Tyne. *Wilts*: Telephone Exchange, Swindon, Alterations and extensions, Building and Public Works Construction Co., Ltd., Headlands Factory, Swindon. *Yorks*: Marton-rd. School, Middlesbrough, School meals accommodation, J. H. Proudcock, 14, Grove-rd., North Ormesby, Middlesbrough.

¶London (M.O.W.).—Contracts placed by M.O.W. during week ended January 1:—

London: Avenue School, School-rd., Manor Park, East Ham, Kitchen and dining-room, W. J. Cearns, Ltd., Carpenters-rd., Stratford. *Berks*: Agricultural Research Council Field Council, Compton, Buildings for new research station, Lavender McMillan, Ltd., 54, Cheam Common-rd., Worcester Park, Surrey. *Glam*: M/Lab. Clasemont Hostel, Morriston, Adaptations, Griffith Davies & Co., Ltd., Paxton Yard, Swansea. *Stirlingshire*: Fintry-rd., Balfron, Dining-room and scullery, L. K. McKenzie & Partners, Ltd., 304, Cathedral-st., Glasgow.

¶London (War Dept.).—Works contracts placed by War Dept. for week ended January 1:—

Inverness: Building work, James Barclay, Kilmarnock. *Midlothian*: Building work, Mactaggart & Mickel, Ltd., Glasgow C2. *Northumberland*: Painting work, Oates Bros., Shipley, Yorks. *Shropshire*: Miscellaneous work (two contracts), Ernest M. Minshall, Ltd., Market Drayton. *Beds*: Building work, Bosworth & Wakeford, Ltd., Daventry; Repairs to heating installation, The Air Vent Heater Co., Ltd., London, N.7. *Kent*: Miscellaneous work, E. Bishop & Sons, Ltd., Sittingbourne.

Morley.—80 houses at three sites, for T.C. M. H. Brook (A.), Housing Director, National Provincial Bank-chbrs., Queen-st. Bricklayer, tiler and plumber: *The Morley & District Builders' Association, Morley. Joiners: *Harlow & Milner, Wakefield, and A. Whitham, Pudsey. Plasterers: *J. Ibison, Gildersome, and H. Williams, Leeds. Painters: *H. Shemeld, Bradford.

Newport, Salop.—16 houses at Victoria Park housing estate, for U.D.C. R. C. Bryan, S.: *Henry Clay & Sons, Ltd., Victoria Park, Newport, Salop, £18,713.

Nottingham.—Primary schools at Wigham-rd., for E.C. R. M. Finch, O.B.E., M.Inst.C.E., City E.: *J. W. Stamp, Ltd., Bobber's Mill, Nottingham.

Rowley Regis.—58 houses at Brickhouse Farm estate, for T.C. S. G. Wood, M.I.Mun.E., M.R.San.I., B.E. & S.: *Nathan Hyde, 6, Claremont-rd., Sedgley, nr. Dudley, £71,600.

St. Ives.—Four houses at Hemingford Grey, for R.D.C.: *C. Duller, £5,361.

Sedgley.—42 houses at Eve-la. housing site, for U.D.C. W. M. Jones, B.Sc., S.. The Council House: *Wm. Whittingham, Ltd., Powlett-st., Wolverhampton.

Stalybridge.—24 houses and flats at Oakwood estate, for T.C. Howard & Benson (AA.). 88, Mosley-st., Manchester 2; *James Ridyard & Sons, Ltd., Railway Saw Mills, Ashton-under-Lyne, £22,726.

Swaffham.—14 houses at Oaklands estate, for U.D.C. J. Owen Bond & Son, architects, Mountergate, Norwich. Two pairs three-bedroom houses: *D. K. Lancaster, 29, Heartseasela., Norwich, £4,866. Five pairs two-bedroom houses: *Oliver Staines & Son, Station-st., Swaffham, £9,981.

Swindon.—202 Easiform houses at site 5B, Moredon, for B.C.: *John Laing & Son, Ltd., £250,897.

Ware.—(a) Seven pairs of bungalows at St. Margaret's estate, Gt. Amwell; (b) 3 pairs of bungalows and 3 pairs of houses at Standon for R.D.C. S., 97, New-rd., Ware. *Lee (Builders), Ltd., Stanstead-rd., Hoddesdon, Herts.

York.—24 old people's bungalows at Carr estate, for T.C. C. J. Smith, O.B.E., City E. & architect. 12 bungalows: *F. R. Dean & Co., York, £12,290; seven bungalows: *F. Shepherd & Sons, York, £6,975; five bungalows: F. Bilton & Co., Hull, £5,578.

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